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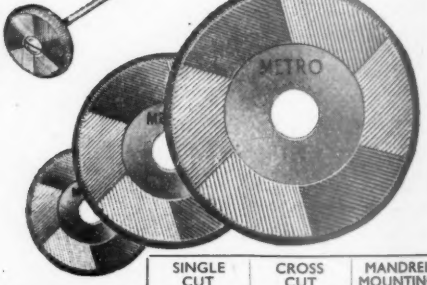

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BRITISH DENTAL JOURNAL

The Journal of the British Dental Association

VOL. LXXXVIII MARCH 17, 1950 No. 6

ORIGINAL COMMUNICATIONS

PROBLEMS OF PARODONTAL DISEASE[1]

By E. WILFRED FISH, *C.B.E.*, D.Sc., F.D.S. R.C.S.Eng.

This new Society of ours has come into existence for the purpose of studying parodontal disease, and this study, as those of us who have engaged in it extensively well know, has many aspects. One of the first things we have, as a society, to think about is nomenclature and nomenclature has been a stumbling block ever since trouble and confusion beset the builders of the Tower of Babel. Much of our difficulty arises because we must have a name for a thing before we can discuss it conveniently, and we must discuss it before we can understand it. Then when we come to understand it better the old names tend to stick. That does not matter so much when a name is frankly descriptive. "Pyorrhœa" is a reasonable, if somewhat inartistic, name; but even here, with greater understanding we recognise early stages of the disease, before there is any appreciable quantity of pus. Moreover, we discover a need also to subdivide the cases where there frankly is a "running of pus"; so we have to think of new names and to qualify the old term "pyorrhœa" so that we get several varieties. Some of us classify these varieties by making the qualifying adjective refer to the way in which the pockets are caused, others by the shape, size and depth of the pockets in each variety or again by the severity of the problem which treatment presents.

Fundamentally we suppose that classification should follow our understanding of the pathology of a group of diseases; and of course classification is the twin sister of nomenclature. Unfortunately here is the worst stumbling block of all, for there are various schools of thought as to the essential pathology of parodontal disease; and though some of the more exotic growths are being discretely, almost surreptitiously, abandoned, there are still differences of opinion.

This problem of classification and nomenclature is therefore a serious and thorny one. Nevertheless we now possess a much clearer appreciation of the essential pathology of parodontal disease than we did twenty, or even ten, years ago; and a working party on classification should not feel too frustrated. Nevertheless when they do define a condition in pathological terms let us be sure the pathology is sound. Chronic marginal gingivitis seems a very safe venture and perhaps they will feel the wisest course is to go on from there by defining Stages I, II and III. This method might finally bring them to that late manifestation of the disease when "pathological wandering" of the tooth is observed and a gap appears between the incisors following the development of an interproximal parodontal abscess.

Possibly this kind of nomenclature would be too esoteric and exclusive, discouraging the weaker brethren. I do not know but I shall watch this aspect of the Society's work with much interest as I know we all shall.

Teaching in the Schools

Another matter with which the Society might obviously concern itself, and which would be of great interest to the older men who still form the greater part of the profession, is to report on what is being taught in the schools. Indeed none of us I fancy is entirely innocent of a little curiosity. Even if we have established our own technique we are wondering how far the schools have outstripped us, what new facts have been brought to light, what improvements in technique, what simplification of method. Very little seems to have been published, but these are matters on which the Society may help to enlighten us. Already we have the prospect of being addressed on two occasions this session by men who are engaged solely in teaching, the one undergraduate and the other postgraduate. We may hope that they will tell us what they are teaching, what of the ætiology and pathology of the disease, what factors control its incidence. How do they

[1] Presidential Address to the British Society of Periodontology, October 10, 1949.

say it should be treated and how prevented, and perhaps even more interesting still, how do they set about making their pupils proficient in the arts of diagnosis, treatment and prevention? How do they maintain and increase their own proficiency and how extend their knowledge both scientific and clinical?

Another aspect of this business of education, which I admit is exercising my own mind just now, is how we are to make sure that candidates for a qualifying diploma are proficient in treating this large group of diseases. Hitherto it has been possible for a candidate to obtain a diploma and a licence to practise, even a degree, without showing to the examiners any practical knowledge of the treatment of these conditions. Even the candidate's theoretical knowledge of the pathology and ætiology of the almost universal progressive destruction of the parodontal tissues, which is observed in civilised man, is sometimes only very superficially tested. The mere existence within our profession, of a Society for the study of these matters must inevitably call attention to their importance; and I hope that they will receive an increasing amount of attention by our licensing bodies, so that the graduate of the future will be fully alive to the significance of parodontal treatment. He may share our view that it is the foundation of all conservative procedures in dental surgery. We may look forward to a time when we shall no longer see careful inlay, crown or bridge work undermined by chronic ulceration of the subgingival epithelium and progressive destruction of the parodontal sling and indeed of the very bone supporting the teeth.

There are some fifteen dental teaching hospitals in the United Kingdom so that there must be quite 300 dental surgeons associated in one way or another with teaching dentistry to prospective recruits to our profession. We hope that these teachers will all join our Society and give us from time to time the benefit of their advice and help in collating and increasing our store of knowledge on this subject. Not only that, but by providing a forum where parodontology is discussed we may hope for some uniformity of teaching so far as fundamental principles are concerned. I have seen an examiner ask an earnest degree candidate the cause of parodontal breakdown and heard in response the most amazing spate of meaningless jargon, evidently learnt off by heart from some apochryphal text and delivered at speed like a pedlar selling his wares. I hope we shall not descend to burning these texts in the market-place, and heaven forbid we should seek to interfere with the freedom of universities or schools to teach what they like. We should soon be told to mind our own affairs and rightly; but we can hope to clarify these biological mysteries of our speciality so that the simple truth will emerge, and there will no longer be any reason for a student to try to learn by heart, or a teacher to teach, what neither he nor anyone else could understand, much less master.

Instruments and Technique

Some members of the Society may, however, feel that these matters are a little outside their province, especially those associate members who have joined the Society hoping to gain a clearer approach to mastering their own parodontal problems in general practice. There is a province for them too in the kind of Society we want to evolve. There are many details of technique to be developed and published, instruments to be designed and a demand to be established for the instruments and appliances we need and without which we cannot in fact cure parodontal disease or maintain the parodontal tissues in health. We owe a great debt to Monahan Lewis of Melbourne for his adjustable knife, it is a beautifully simple and well-designed instrument but we can only get blades made of mild steel which can scarcely be made to take an edge at all and never to hold one. This is intolerable and the manufacturers must be helped and persuaded to abate our woes. A similar difficulty arises over the supply of delicate curettes for deep scaling. The Gracie type of curette is almost unobtainable here and we are told it is due to lack of demand; this has been the situation for years, but now, surely, we can hope to stimulate demand on a more generous scale.

The difficulty is purely one of supply, for there are plenty of clever and efficient designs to choose from; but I have always toyed with the idea of an engine bur for the removal of tartar. I believe a bur could be designed which would not cut the soft tissues or the tooth but which would remove tartar. A very small blunt fissure bur is sometimes the only means a busy practitioner has at his disposal to remove hard interdental tartar. This is terrible heresy and I ought to know better than to make such a statement from this chair, but if it sets someone designing a bur or even an instrument like a tapering diamond point but with a grit that is less hard than diamond and will not cut tooth, I shall be unrepentant.

Other serious deficiencies are scissors delicately curved, accurately designed and skilfully fashioned. I have never seen a pair that fulfilled all these postulates though we have met each requirement singly. Some sort of agreement on a standard kit of instruments for which a reasonable demand could be expected or even a mass order placed might persuade manufacturers that it was worth going ahead with production.

Then there is the question of design of toothbrushes, wood-points, rubber cones and other appliances for the patient's use. I am convinced that a flexible, compressible, matt-surfaced plastic

point will one day be evolved and made available in various sizes; but meanwhile it might be possible to obtain the cheap little Gold Medal wood-point or arrange for a British manufacturer to make these for us over here. At one time we had some holders made so that a short part of one of these wood-points could be more easily operated between the molars, but they followed the wood-points, naturally, into oblivion with the outbreak of war.

It is perhaps a curious activity of a learned society to concern itself with such matters, but there is no doubt that practical difficulties of this kind have been one of the chief reasons why many men have failed to practise parodontal treatment, and not only benefit their patients thereby but enter upon an inconceivably more interesting, fuller, more deeply respected and highly respectable professional life for themselves.

Closely associated with this instrument problem is the question of technique. We have all sought earnestly for an alternative to gingivectomy as the preliminary to the treatment of an established case of chronic marginal gingivitis ; yet the more cases we treat the more impossible does it appear to clean out the débris and the exuberant granulation tissue of the interdental spaces without this preliminary excision of the interdental papilla and the fibrous wall of the pocket. We may seek to destroy the fibrous wall by diathermy or the actual cautery only to achieve an uncertain result with painful and unnecessary thermal trauma to the surrounding tissues. We may leave the wall, and with infinite pains curette away the débris and the granulation tissue, only to obtain a temporary relief knowing that the moment we relax our vigilance the case will relapse.

For many years the criterion for a successful method of treatment of parodontal disease must be that it occupies a minimum of the dental surgeon's time and that the patient can maintain the supporting tissues of the teeth in a healthy state himself with a minimum of effort and a minimum of supervision. We simply have not got the men to devote long laborious hours to maintenance ; and the prospect of having nurses to do this for us is still something of an unrealisable dream to us and a bogy with which those who are not so interested as we are in maintaining healthy teeth in a healthy mouth, try to frighten those who are neither hot nor cold. Happily an increasing number of our professional colleagues, especially the younger men and women, are now doing such good conservative work that they would welcome to their aid young women who have been taught to regard cleanliness and oral health as the sole purpose of their day's work. Indeed the Ministry are carrying out the Teviot committee's recommendations to train girls for this work as an experimental measure. I should imagine that this Society will wish them good fortune in the venture.

Meanwhile we still rely on gingivectomy to clear up the débris of disease before we can re-establish parodontal health once it has been lost, and so we must make this operation as safe and comfortable and simple as we can. For myself I have found that a preliminary intramuscular injection of half a million units of penicillin is invaluable in promoting comfortable and rapid healing. It is seldom that I prescribe a second injection, but when I do I make it some eight to twelve hours later and limit it to cases where from the previous history and the friable nature of the tissues I fear the danger of a parodontal abscess as a sequel to the operation. Naturally in cases of endocarditis the patient is put on a course of penicillin.

Another means of avoiding post-operative pain is to be scrupulously careful when putting in the zinc oxide and eugenol packs to prevent the mixture from coming in contact with the mucous membrane except immediately round the wound. If the labial sulcus, especially in the case of the lower lip, be subjected to contamination by eugenol it will suffer, and a row of most painful ulcers will develop at the line of reflection of the mucous membrane. These can be prevented by using vaselined cotton rolls while inserting the packs and having the patient rinse thoroughly with sodium bicarbonate every few minutes until the next meal, and it is well worth the patient's while to do so. But we should like a material for packing that would not cause these ulcers.

Another very important enterprise has already been set afoot by your Council. Mr. Leatherman, Mr. Cripps and Mr. Cross have been appointed to review the literature and report to you periodically on any advance that is made in this branch of dental study elsewhere in the world.

Stages of Parodontal Disease

I now want to speak for the few minutes that are left to me on the natural sections into which the study of parodontal disease may be divided ; for each might appropriately be allocated to a study group for special consideration and perhaps report.

In the course of the gradual destruction of the parodontal attachment of a tooth two clearly defined stages may be observed. In the first a chronic or sometimes an acute ulceration at the gum margin causes degeneration of the subjacent epithelial cells so that the epithelium becomes detached from the enamel of the tooth. The ulceration then creeps down on to this subgingival epithelium so that there is ulceration at the bottom of the sulcus. The proteolytic products of this ulceration or it may be actual histiocytes, destroy

the periodontal fibres one by one. As these fibres are destroyed the sulcus deepens, for there is no longer anything to stop it from tearing open. Not only are the periodontal fibres destroyed but osteoclasts appear in response to the toxic irritation and the bone of the socket is resorbed. The result of this is that the tooth loosens. Much more is already known of this process which we may call "*the septic breakdown of the parodontal tissues*"; but from the moment when the destruction has reached the point where the tooth begins to loosen in its socket, a new factor appears and the trauma of mastication oversteps the physiological threshold and becomes a mechanical irritant to the bone of the socket, no less capable of causing resorption of bone and destruction of the fibres than the toxic irritation derived from the chronic septic ulcers at the gum margin and in the sulcus. This, the second phase, we may call "*the mechanical breakdown of the parodontal tissues*."

In the first phase treatment must be directed towards getting rid of the sepsis, making the ulcers heal and hardening the epithelium at the gum margin so that the ulcers will not recur. To do this it may be, and generally is, necessary to make the region more accessible by gingivectomy; but the treatment proper is the hardening of the epithelium by friction. In the second phase, however, we are concerned with the trauma of mastication and the treatment is on quite other lines. Of course the marginal ulceration must be eradicated first but the mechanical problem must be solved too.

No doubt it will remain for the research man to tell us from his laboratory the rest of this story as to how the parodontal fibres are destroyed during the septic phase of the disease, whether by the activity of enzymes, which are always to be found in the autolytic products of the dying cells in the bed of an ulcer, or whether by the elusive histocytes which, like osteoclasts, are seldom caught red-handed in the act of digesting intercellular débris. Indeed there are many aspects of both the pathology and treatment of this phase of the disease which we can usefully study, elucidate and broadcast in and from this Society.

Perhaps the greatest danger to the new practitioner in the parodontal field is the old besetting sin of half-measures. Often patients with detached and friable papillæ are told to use wood-points without first being submitted to a toilet of the gum margin. The result is that the detached papillæ, which should have been removed, are torn, and the parodontal condition deteriorates even more rapidly than before. The patient's faith in us and hope for a cure grows dim, the practitioner is discouraged, and a simple early case slips away to the extraction room. Another pitfall is just this picture in reverse; the operation of gingivectomy is performed, more or less radically, but by some strange oversight the patient is not instructed in the correct method of hardening the new epithelial covering of the gum margin by daily friction. Perhaps he is told what to do but without being given further appointments for review and without due emphasis being laid on the need for the friction to be maintained; so that after a while the case relapses, if indeed it ever gets cured, and both the patient and the practitioner lose hope in the possibility of a permanent cure. The worst case of all is when the gingivectomy is done, but incompletely. It may be done on the labial aspect of the lower incisors while the more important lingual aspect is left. It may be done both lingually and buccally but without the deep granulation tissue bed of the ulcers being curetted away, so that the new epithelium grows over this soft inflamed tissue and can hardly be made firm even by the most determined friction. The pitfalls of this work are legion and only a very small proportion of the men in practice today have had any systematic training in the operative technique. It may be hoped that the meetings of the Society will remedy this defect to some extent and that clinical meetings and study circles composed of both full members, who are experts, and associate members, who are in general practice, will explore and extend our clinical knowledge.

Plenty of clinical problems remain to be solved: there is the difficulty of the isolated deep pocket, especially when it occurs on the interproximal or labial side of an upper incisor, there are young children with chronic gingivitis, often hypertrophic, who are too young to tolerate a local anæsthetic and too inconsequent and too lacking in perseverance to maintain daily interdental friction. There is even the unremitting search for a simpler way of keeping gum margins healthy than by toilsome daily friction; I am afraid it is as vain as the search for the elixir of life.

Mechanical Breakdown

I want, however, to draw attention more particularly to the second cause of parodontal breakdown, the mechanical cause. This problem has received very scant attention either here or elsewhere in the world. Many practitioners have realised, indeed it is generally recognised, that too great a lateral strain on a tooth during mastication will ultimately cause the tooth to loosen. Bone will be resorbed and even the periodontal sling may be torn. Bacteria may be trapped in a damaged lymphatic vessel of the parodontal membrane and form an abscess which will cause further destruction and undermine the stability of the tooth still more deeply. These things are recognised by those who have studied the problem and had access to histological material, though it is not so common as it might be for clinicians to keep

themselves informed by constant recourse to the microscope. Yet the solution of this problem of mechanical stress with its unfortunate sequelæ must come from clinicians ; and it is most likely to be solved by those who are familiar with the histological picture of the tortured tissue and realise the true nature of the pathological phenomena involved.

Up to the present, however, clinical attempts to deal with the problem of traumatic occlusion seem to have been limited almost entirely to the preventive aspect. Much study has been devoted to "bite rehabilitation," a procedure by which freedom of lateral movement is provided or restored by removing cuspal interference by spot grinding. There is no doubt that this is a useful exercise and all of us have at least relieved the lateral strain on an individual tooth by this means when the patient has had plenty of other teeth to bite on ; but the major problem arises when a number of teeth have been lost or all the teeth have loosened, so that none can stand the strain of ordinary mastication without mutual support. It is a most unfortunate circumstance that so often the posterior teeth are extracted for a patient with early parodontal breakdown on the pretext of "getting rid of the worst of them." Having lost in this way the teeth which should take the vertical strain, it is impossible to prevent the gradual mechanical destruction of the upper front teeth, which are not only now exposed to the full vertical stress of mastication, but must take this strain at a most disadvantageous angle.

It would seem that the most hopeful solution to this problem of traumatic occlusion, when it has become a real and imminent menace, is to be found in some kind of splint which will provide mutual support for the teeth, so that united they may withstand the masticatory strain, though separately each soon would fall. Many kinds of splints have been suggested. I have seen interlocking mesio-occlusio-distal inlays put into all the teeth, and I have been asked to re-cement one that had become loose ! Such a request throws a strong spotlight on one of the objections to this method. There are two other objections, the result is not a rigid splint, and the labour of doing the inlays is quite out of proportion to the labour of making removable splints.

Moreover removable splints can be made to carry any teeth that are missing from the arch or that may be lost later, so that the evolution of the parodontal splint will eventually solve the partial denture problem ; and is more likely to do so than any of the mechanically superb devices designed by those who are not versed in the pathology of parodontal disease.

I am so impressed with the urgency of this aspect of our study that I hope we shall not exclude from full membership of our Society experts in partial denture construction who are anxious to study parodontal disease, for I believe they have a great contribution to make to the solution of some of our most difficult problems. I have not hesitated to urge that all teachers of partial prosthetic technique in the schools should be required to spend part of their time teaching, and of course learning, in the parodontal departments of the schools as well; I believe I have been in every case "a voice crying in the wilderness." Perhaps the Society will share and emphasize that view, at least I hope they will and that there will be a very active group in our Society working on this aspect of parodontal treatment.

Prevention

Finally, I must mention that other great section of our work, prevention. I have been amazed that where we have set up chairs and teaching appointments in preventive dentistry so little study has been devoted to, or emphasis laid upon, the prevention of parodontal disease. This seems strange from two points of view. Parodontal disease leads to a far greater amount of oral sepsis than caries, and we know far more about its prevention. Incidentally, it is the cause or the excuse for the extraction of far more teeth than caries. I once counted the number of sound teeth extracted in a dental hospital against the number of carious ones, and the former greatly exceeded the latter.

It seems to me, however, that the fact that we know so much more about the pathology and ætiology and prevention of parodontal disease than caries is no valid excuse for a lecturer in preventive dentistry or children's dentistry to neglect it. There are still plenty of problems. We know that friction to the gum margins will prevent chronic ulceration, that fateful initial lesion with its long train of sequelæ, which include pyorrhœa ; but it is not so clear how this friction is to be applied to teeth in which the epithelium is still attached right up to the contact points. At present we believe the toothbrush to be the best instrument for the purpose but there are many views as to how it should be applied. This softening and hypertrophy of the gum margins often starts in childhood and may possibly be related to the hypertrophy of the adenoid tissue of the pharynx. There may be a common cause underlying both, but as dentistry is, I suppose, a larger and more completely autonomous specialty than naso-laryngology, it is surely our responsibility at least as much as theirs to explore these relationships. Much guidance is needed in these matters for the practitioner who carries the responsibility of looking after the dental health of children. Each child has to be taught individually and an assessment of the kind of brush best suited to the texture of his gingival epithelium should be made.

As the marginal tissue hardens under prophylactic treatment a different type of brush or a different technique may be needed. Histopathological study of much material is necessary before it will be possible to trace exactly the first lesion, the first departure from normal in the onset of this condition. Particularly one would like to know more of what happens to the epithelium at the contact point and how it first comes to break down.

In conclusion then it may perhaps be said that there seem to be most adequate and cogent reasons for the institution of such a Society as ours; and if as members we are really interested in the study of parodontal disease we shall find plenty of outlet for our energies. It may, or may not, be a melancholy reflection that no dental surgeon who is interested in the remedial treatment of parodontal disease is left with very much leisure time by his patients ; but the busiest man is always the one who finds most time for important things, and no aspect of dentistry is more important than this. Meticulous attention to parodontal health is the foundation on which all good conservative dentistry is built ; without it one is building on sand, decorating a house with crumbling foundations ; and I am sure that this Society, whether it applies itself as a whole to the study of these disorders or forms study groups for special purposes, will have a most beneficial influence on the whole realm of dental service, I hope very sincerely that we shall prosper.

As the work of the Society bears fruit we may hope that our speciality will be taken up so widely that it ceases to be a speciality, for that is its only destiny. When technique and criteria of success are established, standardised and generally recognised, it will no doubt become possible to include parodontal treatment as a routine in the National Health Service and parodontology will be an important if not the most important feature of prophylactic teaching in the School Dental Service.

DENS IN DENTE

By GÖSTA GUSTAFSON and STIG SUNDBERG

(*Continued from p.* 122)

The Cause of Dens in Dente

All these cases show that the occurrence of dens in dente is always associated with a communication between the cavity of the invagination and the pulp chamber, and that this communication may either take the form of a single wide channel, of several smaller channels or, as in Case 3, the form of a wide opening.

It is also obvious that the outer enamel and the outer dentine are not included in the malformation as such. The apex of the tooth is, however, not normally closed. There are no bendings or changes within these two outer tissues except in Case 3, where the crown was bent.

The enamel of the invagination is the site of great disturbances in both the organic and the inorganic parts. The malformation gives rise to a total lack of enamel in some places. In the first case the enamel was lacking in one place only, namely in the channel leading to the pulp chamber. In the second case the enamel was lacking in a great number of places. In the third case enamel was formed only in the upper part of the invagination. Where the enamel was lacking, of course, no dentine could develop.

As a result of the defect in the enamel and dentine a direct communication is established between the cavity of the invagination and the pulp chamber and consequently also between the surface of the tooth and the interior of the maxilla.

The communication cannot be explained as having been caused by resorption as there are no signs of resorption either in our cases or in those described by other authors.

The most widespread theory is that dens in dente is caused by an active invagination of the enamel epithelium. This does not, however, provide any explanation of the origin of the communication between the cavity and the pulp chamber. There is no reason why an active ingrowth of the epithelium should cause areas without enamel. Usually such ingrowths occurring in tumours of the epithelium are massive buds.

As has already been said, Kronfeld and Kitchin hold the opinion that dens in dente is caused by a passive retardation of the invagination. However, they do not explain why there is a retardation.

In my opinion the theory of retardation is correct. As a complement to this theory, I consider it possible that the absence of ameloblasts is the primary cause of this malformation. If no ameloblasts develop there can be no dentine. In that way there is a direct communication right through the dental bud and, as the connective tissues lie as a core in the defect, the defective part is held back in its original place.

The cause of dens in dente may be as is sketched in fig. 33; a tooth germ lying between the mouth epithelium and bone. For some reason or other the enamel epithelium has a defect going through the enamel epithelial layers. This defect is, of course,

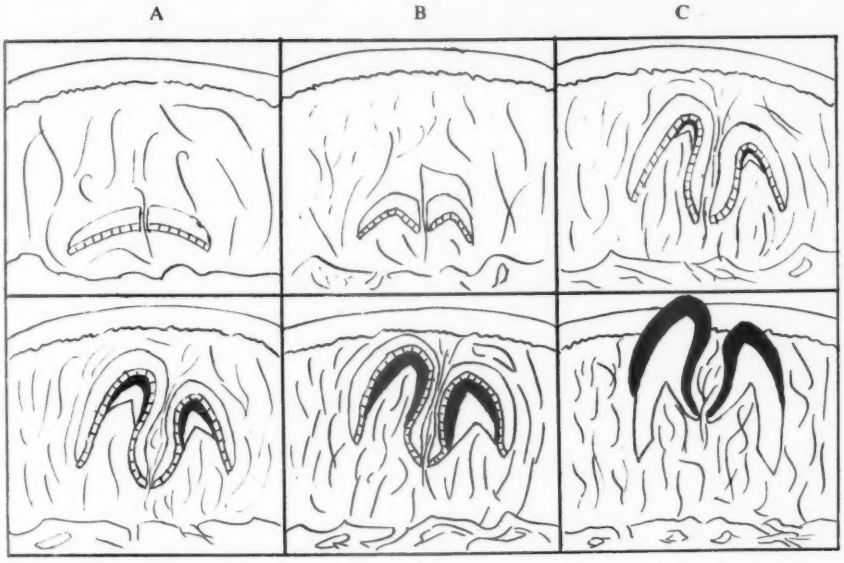

FIG. 33.—Diagrammatic representation of stages in the development of dens in dente.

filled up with connective tissues and the tooth germ is attached to the bone. As the tooth germ grows, as indicated in B and C, there will be a retardation in this place or places as the case may be. Even when the tip of the tooth has mineralised (D and E) the defective part is attached to its original site. Only when the tissues round the defect become mineralised (F) do these parts follow the movement of the tooth. The extent of the retardation depends on the size of the defect. If the communication is a wide one, the connective tissues hold back the defective parts longer than they would do if the communication is narrow. During the movement of the tooth the invagination is exposed to bending or pulling, and the dentine shows the bendings of the dentinal tubules so characteristic of dens in dente. The outer dentine develops without being exposed to abnormal bending or pulling and therefore this dentine shows no bendings of its tubules.

Nor is the outer enamel enclosed in this bending. The enamel of the invagination has its supply more or less obstructed and is therefore more or less imperfectly nourished and mineralised. The poor state of the enamel of the invagination is not due to primary damage. The malformation starts with the defect in the enamel epithelium.

Swanson and McCarthy think that the defect is not caused by retardation as the invagination is nearer to the apex than the enamel normally is. I do not agree with this inasmuch as the bendings and the retardation are dependent on the size of the defect and on the original place of the dental bud.

Dens in dente are only seen in the maxillary front teeth. These teeth have originally a slight depression (foramen cæcum) and this may become more pronounced—resulting in a dens in dente. The cause of dens in dente may therefore be a total loss of enamel at that place where the enamel normally is very thin. Formations like the foramen cæcum of the front teeth are not present in other teeth.

Our last case shows, however, that dens in dente may also be caused by trauma. In this case the malformation also started with a defect in the enamel epithelium. This tooth was not a maxillary one and the site of the invagination was not at the place of a foramen cæcum but on the buccal surface of the tooth. This indicates that trauma may give rise to retardations of the growing tissues of the tooth germ. It appears to be likely that this case is the result not of an active ingrowth from the side of the epithelium but of a passive retardation of the damaged tissues.

TREATMENT OF DENS IN DENTE

The communication between the surface of the tooth and the interior of the maxilla explains the periapical inflammation which is an aftermath of necrosis in the pulp. The infection starts in the débris of the enamel organ within the cavity of the

invagination and spreads through the channels to the pulp chamber. In such cases, where the connection between the pulp and the cavity is favourable, that is, where the tissues in the channels and in the cavity are well nourished, an eventual infection may be withstood for a long time and filling the cavity may be the best means of protecting the channels and the pulp from further infection. In such cases where the treatment is successful the construction of a jacket crown is perhaps the best solution. Case 7 gives an example of a tooth treated and covered with a jacket crown, and functioning for years without giving trouble to the patient and without visible rarefaction in the periapical region. Of course such crowned dens in dente must be inspected frequently. A chronic process must, however, be kept under prolonged control, as the possibility of an acute exacerbation is always present.

ACKNOWLEDGMENT

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A CASE OF EWING'S TUMOUR WITH PRIMARY LESION IN THE MANDIBLE

BY F. A. C. OEHLERS, L.D.S.S'PORE

From Dental Department, King Edward VII College of Medicine, Singapore

HISTORY

A Chinese male, aged 18, emaciated, very anæmic and toxic in appearance, presented himself on December 20, 1948, complaining of a large, relatively painless swelling of his left mandible. He stated that a lower left molar had become loose about three months previously, and he had had it extracted. This was followed by a swelling which rapidly grew to its present size. A rapid loss of weight and increased weakness accompanied the condition and he had recently developed a limp due to a painful left knee.

DESCRIPTION

Extra-oral Examination.—There was a massive smooth swelling occupying the whole of the left lower jaw and extending past the mid-line to about the level of the right angle of the mouth (fig. 1). The skin covering the growth was stretched, shining and inflamed at the inferior aspect of the tumour where there was a raw fleshy mass about 1½ inches in diameter protruding through the tense skin. It was covered in part with a yellowish slough which seemed to be fibrinous in origin. There was a steady dripping, which was quite uncontrollable, of blood from this mass.

The excursions of both condyles were normal, there being no trismus, or deviation to either side. The submandibular lymph glands of both sides were palpable, movable but not tender.

Intra-oral Examination.—The growth, which extended from the left ascending ramus to the right first premolar region, was lobulated and fleshy in appearance and of a pinkish colour, darker than that of the pale epithelium of the rest of the mouth. It was coursed over by numerous dilated veins. The lower left premolars and first molar were absent, and here the surface of the growth was ulcerated, due to the traumatic irritation of the corresponding maxillary teeth. The lower anterior teeth and the left second molar were loose and displaced.

On palpation, the growth was of a fleshy consistency for the greater part. No fluctuation was elicited.

General Examination.—A fusiform swelling of the

FIG. 1.—Case as seen on admission to hospital. The dressing covers the protruding fleshy mass. The swelling of the left knee is also seen.

FIG. 2

FIG. 3

FIGS. 2 and 3.—Antero-Posterior and lateral X-ray appearance of mandible. Note resemblance to a low grade chronic osteomyelitis.

left knee was present (fig. 1) and any movement of this joint was painful. An abdominal mass in the left hypochondrium, presumably the spleen, was palpable as low down as the level of the umbilicus. Of this mass the patient was unaware. The mass moved slightly with respiration and was relatively hard.

RADIOGRAPHIC FINDINGS

Mandible.—The whole of the left ascending ramus, left body of the mandible and part of the right side as far as the first premolar region show an increased density and have a mottled appearance not unlike that of a low-grade chronic osteomyelitis (figs. 2 and 3). There is a slight expansion of the cortex. Spicules of bone radiating outwards from the cortex give a sun-ray effect (fig. 4). Towards the periphery the spicules of bone are irregularly arranged, but are generally parallel to the body of the mandible.

Other Bones and Tissues.—Of the other bones, only the distal end of the left femur and proximal ends of the tibia and fibula show involvement (fig. 5). Here again the sun-ray appearance of the bone in relation

FIG. 4.—Same view as fig. 2 but demonstrating "sun-ray" effect of bone spicules apeing the appearance of an osteogenic sarcoma.

FIG. 5.—Radiograph of left knee joint. Lateral aspect. Periosteal lipping and sun-ray effect can be observed. There is no evidence of deep invasion of the bone. The patella is intact.

to the tumour is in evidence. "Periosteal lipping," too, is well demonstrated. The lungs do not show any involvement.

PROVISIONAL DIAGNOSIS

From the clinical findings a provisional diagnosis of sarcoma was made and this was extended, in view of the radiographic findings, to one with some degree of osteogenesis, i.e. a partial osteogenic sarcoma.

TREATMENT AND PROGRESS

The patient was admitted to hospital. It was realised that his case was hopeless and purely palliative treatment was carried out. Deep X-ray therapy, which might have had an effect, was not available then.

The mandibular growth rapidly increased in size, and pain, although absent in the early stages, now became intense and continuous. It was temporarily relieved by injections of morphia. The patient's temperature fluctuated daily between 97° F. to 101° F. He became extremely cachectic until he died on New Year's Day, 1949, twelve days after he was first seen. The immediate cause of death was considered to be toxæmia.

POST-MORTEM EXAMINATION

The size of the mandibular swelling had increased considerably as compared to its size when first seen only twelve days previously. It had spread as far as to the right first molar region and all teeth involved were markedly loose and displaced.

Unfortunately, autopsy was refused. However a small piece of tissue was removed from the right submental region. This specimen included a portion of intact skin separated from the actual tumour by connective tissue. The gross examination of the tumour showed it to have what appeared to be a well-defined although irregular edge. The tumour was yellowish and homogeneous in appearance, except for a few small brown areas of local hæmorrhage, and had a gritty feel.

PATHOLOGICAL FINDINGS

From the above specimen sections were prepared and an examination of these revealed that the growth was an Ewing's tumour. Sections were sent to the Institute of Medical Research, Kuala Lumpur, whose report confirmed the diagnosis. "There is no doubt in our minds," their report states, "that the tumour is an endothelioma of bone (Ewing's tumour)."

Histologically, the tumour consists mainly of small round or oval cells arranged in monotonous sheets (fig. 6). The nuclei are relatively large and

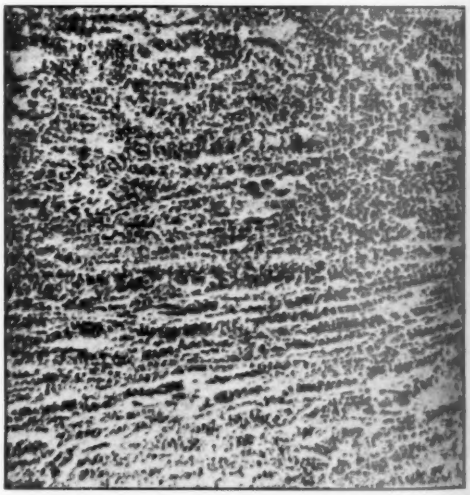

FIG. 6.—Low-power view of typical section of tumour. The sheet-like arrangement of cells and the scanty stroma are evident. (× 150.)

stain deeply and there is very little cytoplasm (fig. 7). Many mitotic figures can be seen, evidence of rapidity of growth and malignancy. Stroma is scanty. Sections show an invasion by tumour cells between individual muscle fibres (fig. 8). At one

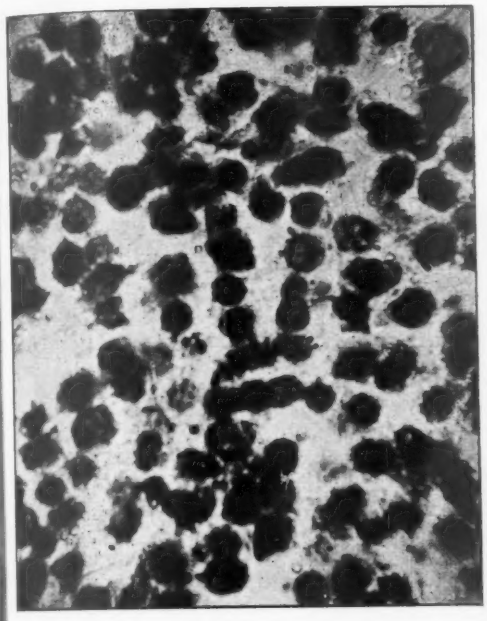

FIG. 7.—High-power view of typical tumour cells. Nuclei are relatively large, stain deeply and cells have little cytoplasm. (× 800.)

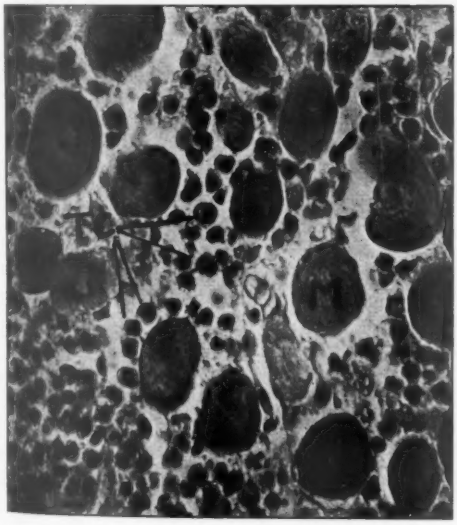

FIG. 8.—Section near edge of tumour. Tumour cells infiltrating between individual muscle fibres. M, Muscle Fibres. TC, Tumour Cells. (× 400.)

area along the margin of the tumour, there is an occasional field under the microscope where an attempt at encapsulation can be seen, but tumour cells are seen to be breaking through this and invading the surrounding tissues in adjacent fields. Another feature is the presence of spicules of bone with a distinctively fibrous structure (fig. 9) and

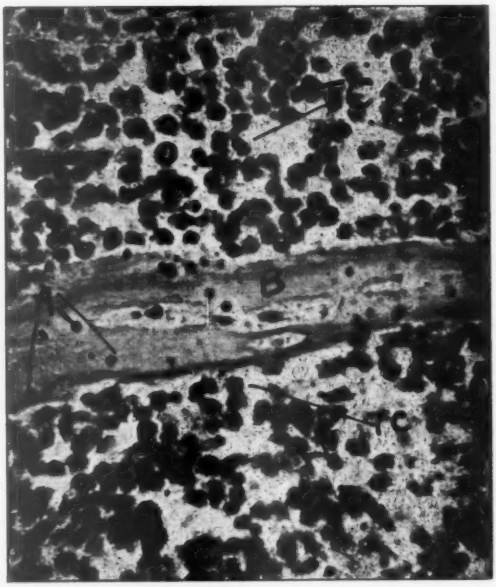

FIG. 9.—High-power view of a bone spicule, showing its fibrous structure and embedded tumour cells. Note the arrangement of tumour cells simulating that of osteoblasts along the periphery of the spicule. TC, Tumour cells. B, Bone spicule. A, Artifact.

surrounded by a uniform layer of cells in the manner of osteoblasts, but these cells are identical in every respect with tumour cells. Some have become embedded in the fibrous bone. These are distinguished from osteocytes of normal bone chiefly because they do not have the cell processes of osteocytes.

Here and there are areas of necrosis and internal hæmorrhage.

DISCUSSION

Since an autopsy was not done, the question arises as to whether or not the primary tumour was in the mandible. Clinical and radiographical findings show that, apart from the mandible and the bones of the left knee-joint, no other bone in the body was involved. The patient insisted, furthermore, that the swelling on his left knee came long after that on his mandible. As it is only possible for

a primary Ewing's tumour to occur in a bone, it is reasonable to conclude that the primary tumour was in the mandible, with secondaries in the bones of the left knee-joint and, probably, the spleen.

This case is recorded in view of the fact that an Ewing's tumour of the mandible or maxilla is rare. In 1935, Geschickter recorded that out of a total of 323 miscellaneous jaw tumours, 19 were diagnosed as Ewing's tumours [1].

A few features in this case are interesting, viz.:

(1) Trauma is often given as an ætiological factor in the occurrence of Ewing's tumour, but here no such history was obtained. A molar tooth was extracted because it had become loose. It seems evident that the growth was already present, and it was the involvement of the supporting structures of this tooth that caused it to loosen.

(2) An outstanding feature is the rapidity with which the tumour progressed, terminating only after three and a half months, if the history given is reliable, whereas the average Ewing's tumour takes a considerably longer period to reach a fatal termination.

(3) There was no spontaneous temporary regression of the tumour which is quite a common occurrence with an Ewing's tumour. Its early fatal termination might have accounted for any temporary regression not being observed.

(4) Pain was only present in the later stages, when it became intense and continuous. In the majority of cases, pain is one of the earliest symptoms of Ewing's tumour, and it is this which usually causes the patient to seek medical attention.

(5) Radiographs of the ordinary relatively slow-growing Ewing's tumour show a laminated or onion-peel arrangement of its extra-cortical bony structure, but, in this rapidly growing case, the spicules of bone radiated outwards giving in radiographs a sun-ray effect which is one of the important features of osteogenic sarcoma. The same applies to the " periosteal lipping."

(6) The lungs are stated to be invariably the site of metastases, but clinical examination confirmed by radiographs showed that they were uninvolved in this case.

(7) Lastly, it may be interesting to note that the primary and secondary lesions were all found to be present only on the left side. Whether this has any significance is not known.

ACKNOWLEDGMENTS

I am indebted to Professor E. K. Tratman, M.D.S., F.D.S. R.C.S.Eng., F.S.A., for his valuable advice and assistance in preparing this article, and to Mr. K. P. Yap who took the photographs and photomicrographs of the case.

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OWEN'S DENTINE CONES RE-EXAMINED

BY P. PINCUS, D.D.SC.MELB., F.D.S. R.C.S.ENG.

Physiology Department, Medical School, Middlesex Hospital, London

THE lines in the dentine first described by Owen are well known. It is a question, however, whether another appearance he described is as well known. In his Odontography (1840) Owen remarks :

> " in many teeth moreover . . . the secondary branches of the dentinal tubules dilate into intertubular cells along lines, which in like manner are parallel to the coronal contour of the tooth ; hence another cause of the appearance of concentric lamellæ and of the *actual decomposition of such teeth into superimposed lamelliform cones*."

In the present work, crowns of sound, human molar teeth have been freed of roots at gum level, pulp tissue discarded, and the crowns well washed with water. Such specimens then comprise the proteins on the surface of the tooth-groove protein and Nasmyth's membrane, enamel, and dentine. A series of such crowns has been exposed to 2 per cent hydrochloric acid for twenty-four to forty-eight hours at room temperature.

It has been noticed that in some cases fragments about 4 to 5 mm. in diameter and about 0·5 mm. in thickness have separated from the dentine and are then seen lying free. Some of these fragments appear to come from a point directly under a cusp, while the site of others is from the dento-enamel junction on the lateral aspect of the dentine, exposed when the enamel is removed by the acid. Fig. 1 shows such a fragment, while fig. 2 shows a fragment in place.

FIG. 1.—"Cap-shaped" fragment separated from the dento-enamel junction by exposure of the tooth to 2 per cent hydrochloric acid. It measures about 4 to 5 mm. in length by about 0·5 mm. in thickness.

In other work, sound human molar teeth have been kept at 60° for periods ranging from four to twenty-four hours. When such heated teeth are

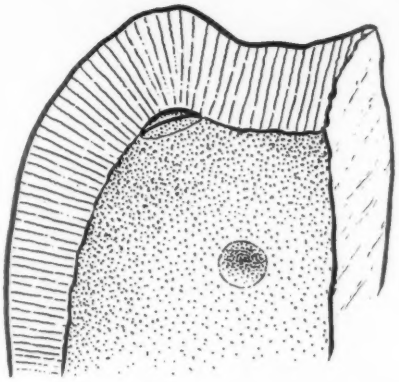

FIG. 2.—Drawing of "cap-shaped" fragment in place under a cusp.

tapped with a light hammer blow, enamel separates from dentine, though as shown in fig. 2, a "cap" of dentine often remains under a cusp attached to the enamel.

These observations should be considered alongside fig. 3, reproduced by kind permission of Dr.

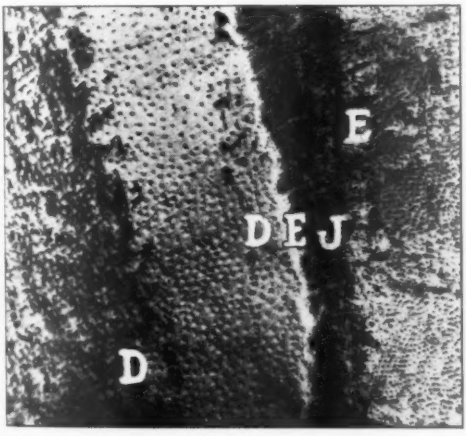

FIG. 3.—Transverse section through enamel and dentine at dentino-enamel junction. Etched 5 seconds with 3·2 N. HCl. (E = enamel, D = dentin, DEJ = dentino-enamel junction.) (× 75.)

D. B. Scott, Senior Assistant Dental Surgeon, United States Public Health Service. This hard ground section shows the dento-enamel junction, after etching five seconds with 3·2N hydrochloric acid. Between D (=dentine), and DEJ (= dento-enamel junction), the dentine may be seen to differ from the rest of the dentine shown.

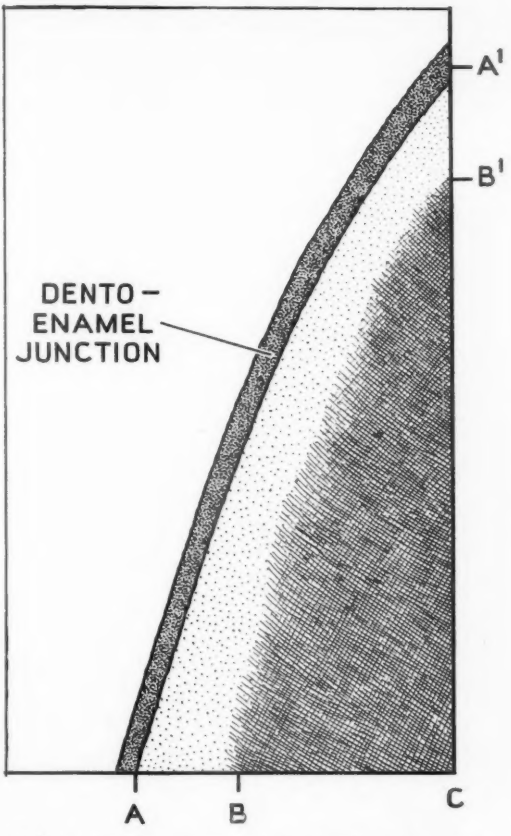

FIG. 4.—Drawing from fig. 44, Thewlis. Dentine examined by polarised light. A differentiated area is seen to lie between the dento-enamel junction and the rest of the dentine.

Fig. 4 is drawn from fig. 44 in the work of Thewlis, who has shown a photomicrograph of a tooth section as seen by polarised light, when "interference colours" are seen. The appearance shown in the illustration suggested that "this region is relatively highly calcified" though Thewlis pointed out that this method of examination of dentine presents difficulties which he has discussed in his work.

Hopewell-Smith described lamellæ seen in mature dentine, and quotes Bennett who described "laminations" in dentine. Noyes, Schour, and Noyes noted that the dentine next the enamel and extending about 0·5 mm. from it, presented an appearance of better calcification. They point out that it does not follow the incremental pattern ; Weidenreich named it, they say, "mantle" dentine.

For histological examination, teeth must first be decalcified unless ground sections are used. The irregular or "gapped" appearance presented by the dento-enamel junction is, in some instances, probably due to the unnoticed loss of fragments of the kind described above.

SUMMARY

Fragments may readily be separated from the dentine by exposure to 2 per cent hydrochloric acid, or by the use of heat. Ground sections of complete teeth show that in some teeth a well-differentiated area exists in the dentine, next to the enamel. This area is probably more highly calcified than the rest of the dentine.

ACKNOWLEDGMENTS

I am indebted to my colleagues at the Hospital, and to the Medical Research Council.

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RATIONAL DENTISTRY [1]

BY A. J. SUTHERLAND, L.D.S.EDIN.

IT is probably true to say that never before in the history of the country have our infant and primary schools been populated with such a healthy lot of youngsters. The dental condition has shared in this improvement. As the continuance of such a state of affairs can only be purchased at the price of constant vigilance, it is frankly to be deplored that what might seem to be the golden opportunity not only to consolidate gains but to make solid advance is being lost. There never have been many chances for the busy dental officer to engage in statistical or other research, although the avenues of such surveys are open if conditions permitted. Nevertheless, it is the duty, at least of the Senior Dental Officer, to indicate either as a result of experience, observation, or study, or all three, practical measures which may reinforce defensive action against dental disease.

In September 1947, as reported last year, a small scale observation into the maintenance of the deciduous teeth of the nursery children up to the age of 6 was undertaken. The post-war improvement in the dental condition of these children was sufficiently notable to warrant specific enquiry as to the degree of caries incidence comparative with pre-war figures. In London, after exhaustive and meticulous survey, a 33 per cent increase in caries-free or nearly caries-free incidence compared with 1929 was established. In Glasgow, one of the blackest spots in the country, similar improvement was noted. Leicester was no exception. Indeed there were few areas, urban and rural alike, which could not point to this trend. On the face of it, it could not but be assumed that the overall influencing factor was the very necessary but altogether fortuitous defensive nature of the basic dietary. Also what was important and wise was the direction of those nutritive and protective foods in short supply, such as milk, to the classes of the community who had by common consent a prior claim to them. There can be little doubt this policy has paid rich dividends. It can be assumed that dental health was benefited at least in two ways. Systemically, it had the advantage in the formative years of a basic and auxiliary diet of considerable calcifying value. Externally, the withdrawal of those large quantities of fermentable carbohydrates which are not eaten because they contain sugar but simply because they are sweet, gave the dental tissues one hostile agency the less to fight. In the absence of clear scientific causation, these are two fair, reasonable assumptions.

If, then, under these dietetic conditions, the children of nursery age, having had the good fortune to benefit by the sum total of ante-natal, post-natal and nursery class care, can arrive at the age of 5 with sound, or nearly sound, deciduous dentitions, why, it may reasonably be asked, stop the nursery regime at 5? From a dental point of view it is the age of 6 which is one of the critical points in a child's dental history. I do not wish to enter the controversy which rages round the 6-year-old molar ; I am here interested only in the attempt to preserve dental health and normality without operative interference up to the age of 6. In any case, the orthodontic reasons which are the crux of this particular controversy do not arise at this early age. One of the greatest pleasures in this work is to inspect children at this age who have a sound, perfectly occluding, well-spaced deciduous dentition, and the first permanent molars coming nicely into their appointed places.

It is just this aspect of the matter which has made the observation of groups of nursery children at two selected schools so worth while. The many

[1] Abstracted from the Annual Report of the School Medical Officer to the City of Leicester Education Committee for the year ended December 31, 1948.

administrative difficulties which stand in the way of a full-scale extension of even a modified nursery regime for another year are fully realised, but as a serious contribution to a phase of preventive dental medicine, it is well worth considering. While I am not competent to assess these, there would doubtless be other physical and psychological advantages. The suggested proposal is that those children who are entering the transition period between leaving the nursery class and approaching full admission at the age of 5 and who possess sound, or nearly sound, deciduous dentitions should be given the full benefit of another year's specific supervision under a modified nursery regime. In justification of this proposal, consider first these figures. The first three are taken from a cross-section of our actual inspections during 1948 :

Age	*Total*	*Requiring treatment*	*Not Requiring treatment*	*Caries incidence*
Nursery, 3 to 4 plus ...	974	147	827	15%
8	379	156	223	41%
15	216	118	98	55%
Adult population ...	Generally accepted estimate			Over 90%

Truly a rake's progress. Yet in this city 81 dental practitioners are feverishly coping with the mass casualties of dental disease. Six dentists only are assigned to the point of the front which any intelligent person would recognise as the point at which the disease could be brought under reasonable control and kept there. It is a military axiom that victory will go to the belligerent who brings to bear the most effectives at the right place at the right time. The medical historian of the future will not readily understand the present unintelligent disposition of the dental forces. Casualties have to have every human consideration, but if the present maladjustment of dental man-power is persevered with there will be a continuance of mass casualties for the next fifty years, a terrific waste of health and wealth.

This is, therefore, one practical approach. There are several others. Unfortunately they must be based on purely empirical conclusions. In reporting on the results of the observation into the oral condition of the nursery children, the two groups were selected with some care. Each individual tooth was carefully examined as to structure and caries incidence. Occlusion, attrition, spacing and staining, all these factors were noted. The state of the gums, the tonsils, the injurious effects of habit-forming and any relevant information regarding the general health of the child were taken into account. The same procedure was adopted for the other two groups at two other schools who were to be used for comparison. These children, if they were not all dentally sound, were in possession of good functional dentitions at the time they were due to leave the nursery class. All four groups were examined at intervals during the year.

The two groups under continued supervision received the full benefit of the nursery regime slightly modified to take into account their mental and physical growth. They continued to receive all the dietetic advantages given to them as nursery children, milk, midday meal, and the appropriate vitamins. There were all the other supervisory services at their disposal, general and oral hygiene were well looked after. They had their daily siesta in the open air and as much time outside as our climatic conditions permitted. And, of course, the school premises and the apparatus for recreation are excellent. Both these groups of children were exceedingly well cared for, and sincere thanks are due to the headmistresses and the teachers concerned for the considerable work involved. The actual feeding of these children is not without its humour. Most parents know how difficult it is to get young children to eat fresh vegetables or salads. It is not a bit of use saying : " It's good for you." But a child is an acquisitive individual, and however reluctant he or she may be at home, there is no hesitation at school when they see other children " tucking " into things they have been deliberately missing at home. In any case, an unknown carrot or lettuce offered at home has not the same succulence or glamour as the carrot or lettuce grown, cleaned and prepared by oneself at school. Incidentally, a great deal of these vegetables and salad ingredients had been grown on humus-prepared soil, a horticultural development which may have far-reaching effects in matters of health.

It is difficult actually to give the results in statistical form. If we take both supervised groups together, 60 children were originally examined, 52 stayed the full year. In the two control groups 60 were also originally examined, but only 46 stayed the full year. There were quite a few migrations to other schools under the County Authority. The actual dental results at the end of the year, that is, from September 1947 to September 1948, can be tabulated simply as follows :

	Total number	*Requiring treatment at the end of the year*	*Percentage*
Supervised groups ...	52	2	4%
Control groups ...	46	15	33%

That is to say, the numbers shown to require treatment at the end of the year would be just those children who would normally be referred for treatment as the result of annual inspection. This is striking enough. What was more striking, however, was the oral condition generally. The two supervised groups were, frankly, a great pleasure to inspect. I cannot adduce any scientific reason for making the assertion, but I felt certain that the care

which had been expended on these children had consolidated the oral health with which they had started the year. It was interesting to note definite improvement in eight cases of tonsillar obstruction. In three cases of persistent and injurious habit, two were cured and one very bad case was referred for advice. These three children were doing grave damage to their bone development.

In the case of the two control groups, where there was clear evidence of home supervision, and it was most gratifying to note several such cases, there was little or no deterioration. The majority, however, was extremely unsatisfactory, and deterioration was most marked in those cases where there was not the slightest sign of an attempt at oral hygiene. Interstitial caries was progressive and the first permanent molars were erupting into sites which were swollen and inflamed. In this latter connection, it is significant to observe that these permanent molars tended to be ahead of schedule in those children whose mouths exhibited a degree of inflammation due to lack of cleanliness. In the clean mouths of the supervised children, these teeth did not seem to be in any hurry, nor was there any evidence of any discomfort. All of those 52 supervised children, with the exception of two, had reached this eruptive period in a normal, healthy way without operative interference. This was the objective aimed at. It is impossible to be didactic about the scientific certainty of this proposal, but as a serious contribution to the cause of preventive dental medicine, it can confidently be submitted, in spite of the many administrative difficulties, to the sympathetic attention of the Authority. We are carrying on the observation at the same schools with, of course, a fresh group of children, so that it may be possible to envisage this modest but enthusiastic beginning as leading to something very much wider in scope and purpose. Indeed, it is hoped that these two schools, which have lent themselves so admirably and willingly to this present survey, may be the bases for much more fundamental work relating to food, its source, its quality and its preparation. How intimately dental disease is concerned with those three factors can only be surmised but that there is here a useful field for enquiry there is no doubt at all. The Leicester Authority has taken a pioneer lead in this nursery movement and modern industrial usages being such as they are, it would seem as if the Authority will have to stand in *loco parentis* for these very young children for a long time to come, at least during school hours. It is a tremendous responsibility, but a challenging one. To dental science, it is a chance not to be missed.

In addition to this significant but practical approach to the cause of prevention, there are three others at least which must loom large in any present or future computation of the problem :

(1) The question of the easily fermentable carbohydrates.

(2) The effect of fluorine.

(3) The source and quality of our food.

The refined carbohydrate may or may not be the arch-criminal in this matter, but he would be a rash individual who would deny that the facts relating to its consumption do not point it out as a powerful accessory. Suppose we accept that and state unequivocally that we know that in large measure refined starches and sugars are a menace to the children's teeth, how are we to contemplate the removal of control from the consumption of all grades of sweets ? If we could credit all classes of parents with wisdom and restraint in this matter perhaps no great harm would accrue, but no reliance can be placed on this source of control, and unless the question of quality can be dictated at a high level, we can only foresee an early and devastating return to the bad days of twenty years ago. What we older people are inclined to forget is that what we are pleased to call austerity is a condition of normality for every child today under the age of 12 at least. And, all told, it has done them no harm. Surely, therefore, it can be submitted that the nature and quality of those carbohydrates should have been the criteria before exposing masses of children to the injurious effects of the more destructive forms of confectionery. Dentists have no more desire to be spoil-sports than any other class of the community, but quite frankly they view the prospect with something akin to consternation. The taste for sweet things is natural and physiological, but surely it is not beyond the wit and wisdom of the dental dietitian, allied to the interests involved, to indulge that taste with the minimum risk of injury. It has been done, of necessity, it is true, in the case of the white loaf. It ought to be done in this case. To return to the white loaf would be from every point of view unthinkable, and unless fundamental causes are fully established soon, which is unlikely, the unleashing of this carbohydrate menace without reasonable control will serve not only further to embarrass the depleted School Dental Service but to maintain the cost of the General Dental Service at its present high level. These are the least of the evils ; the chief victims will be the children themselves.

Addendum

The case for continuous nursery prophylaxis up to the age of 6 would be, I think, accepted in principle by most authorities if economic conditions permitted. Such prophylaxis has little research value, if any, and since writing this report, I have been so advised. At one of the selected schools, unless the economic axe falls, we hope to grow our own vegetables, have our own kitchens and supervise our own cooking. In the initial stages the children to be

under observation will be chosen at random, charted, and results noted. Even without these facilities, I have given effect to this recommendation in order to keep up the interest among teachers and parents whose co-operation has been so notable. In time, it is possible to envisage an extension into as many schools as have nursery regimes. The whole case hinges on concentrating the benefits of such knowledge, skill and resources as we have, on the foundational period, the early formative years. In principle, such a case would find general agreement throughout the profession. There would possibly be differences in direction. Miller, Mellanby and Broderick may appear to be divergent, in the end they may prove to be complementary. Certainly, nothing in the nature of an apostolic creed can be attached to any one of them. We cannot afford to have closed minds and here I venture to make an appeal. It is easy to be cynical about methods of husbandry. Not all devotees of organic farming and horticulture are cranky back-to-naturists. Many of them are scientifically minded people devoting their means to, and risking their livelihood on, the investigation of what they consider to be a vital health principle. On the other hand not all providers of chemical fertilisers, faced as they are with the hard problem of feeding millions, are a set of profit-seeking speculators exploiting a desperate situation. The Ministry and the profession are very rightly investigating the potentialities of fluorine. Wouldn't we be wise, similarly, to go into such evidence as there is, not necessarily to come to conclusions, for that would be manifestly impossible, but to be well briefed by both sides of this food production problem, and its relation to health? The truth we are all seeking for may be at the bottom of this particular well.

SHORT COMMUNICATIONS

A COMPOUND ODONTOME IN A BOY AGED TEN

By DAVID A. E. CHAMBERS, L.D.S.V.U.Manc.

History.—The patient first came under my care in August 1947 at the age of 8. His dental condition was

6edc21 | 1 bc e6

6edc21 | 12 cde6

There was a small cavity in d |, which I filled. His second visit to me was in May 1948 when e | was filled. Although there was no sign of | b being shed I still felt that there was no immediate cause for investigation.

However, in July 1949 there was a small bony swelling of the outer plate directly above | b which was still present.

Radiographs.—I took an intra-oral radiograph and diagnosed a compound odontome. A second radiograph was taken immediately from a different angle. The films established that the root of | b was almost entirely absorbed, that | 2 was present and unerupted, and that | 2 the odontome and | b were in the same straight line.

Fig. 1.—Radiograph of odontome in situ.

I decided to operate to remove the odontome and | b with the hope that at some future date | 2 would erupt normally.

Operation.—The infra-orbital and incisive foramina were infiltrated with 2 per cent procaine hydrochloride and adrenalin. A few drops only were injected into the incisive foramen, the remainder of a 2 c.c. cartridge was injected near to the infra-orbital foramen. An incision was made beginning in the fornix of the buccal sulcus and running downwards and mesially to the neck of the | c, thence following the gingival margins of | 1bc and running upwards to the sulcus again from the neck of the | 1.

The flap thus formed was elevated from the bone. Four holes were drilled in the outer plate with a fine tapered fissure bur at the corners of an imaginary square enclosing the bony swelling. This square was completed by joining the holes by cuts with a bone chisel, using a mallet. The square of bone was lifted out, revealing a glistening membrane, through which the denticles could be seen. The membrane was opened and the denticles were eased out with a small elevator. The membrane lined a spherical cavity the size of a large pea. Finally the lining was removed in strips by grasping it with Spencer-Wells forceps, and the | b was extracted.

The flap was replaced and secured with three sutures, two of which were mesial and distal, the third suture attached the edge of the flap to the palatal mucous membrane enabling the flap partially to cover the socket of | b.

One intramuscular injection of 300,000 I.U. penicillin-procaine in aqueous suspension was given and a course of 10 troch. penicillin 1,000 I.U. prescribed. (N.B.—I have found this aqueous suspension quite painless whereas the oily emulsion I have found to be very painful.) Healing was uneventful ; the sutures were removed after five days.

Histology.—There were fifteen denticles, a clump of four, a clump of five, and six separate ones. The clumps were fused at their coronal portions. A ground section of a single denticle was made and the structure may be seen in figs. 2 and 3.

The enamel is distributed as in a normal tooth. The prisms appear to be more flexuous. Parazones and diazones can be seen.

FIG. 2.—Section of one of the denticles. × 60.

FIG. 3.—Detail of enamel and dentine of a denticle. × 270.

The dentine appears to be normal tubular.

The dimensions of the denticle are approximately 4 mm. in length by 1½ mm. in diameter. One is struck by the almost perfect resemblance to a normal tooth on such a miniature scale.

I was unable to form any conclusion about the contents of the pulp chamber or the presence or absence of cementum.

ACKNOWLEDGMENTS

Thanks are due to Dr. F. W. Lamb of the Bacteriological Laboratory, the Colonial Hospital, Port-of-Spain, for clearing and mounting the specimen and the Colonial Microbiological Institute of Trinidad who made the photomicrographs.

SOME CASE SHEETS FROM A HOSPITAL IN UGANDA

BY SURGEON COMMANDER (D) D. BARKER, R.N. (RTD.), L.D.S.ENG.

(1) *Hypertrophy of Gums in both Maxilla and Mandible.*

The patient, a woman aged about 40, had the condition shown in fig. 1 for a period of five years.

FIG. 1.

As with most Africans there were large masses of tartar round all the teeth, as well as the hard subgingival calculus.

Most of the teeth were loose and, as can be seen in the photograph, several were pushed out of position—one tooth being completely inverted.

The patient was admitted into hospital and the masses excised, a portion at a time, and teeth were removed.

Healing was normal and the patient was discharged after two months.

(2) *Cystic Adamantinoma.*

Patient had the condition illustrated in fig. 2 for over seven years, having refused an operation at that time.

It was a difficult case. The bone was ¼ in. thick and extremely hard. My dental bone chisels would not

FIG. 2.

stand up to the work so we had to saw through with a Gigli saw.

This case was not satisfactory as sepsis intervened and the patient was a long time in hospital before clearing up. After about three months in hospital he became anxious about his "shamba"—a small holding, such as most natives have in Uganda Protectorate. He was afraid that his food supply for the next year would fail if he was not there.

As he insisted on leaving, he was discharged and advised to attend the local dispensary for further dressings and to return for inspection at Mulago as soon as he could. He has not yet returned, after six months.

(3) *A Case of Cancrum Oris.*

There was not very much that a dental surgeon could do in such a case except to make retainers to form the sulcus when the tissue flap was finally in place (fig. 3).

FIG. 3.

This case was responding well to the treatment which was given, first on the patient's left side, by the Government Surgeon, Mr. McAdam.

I went on home leave and did not see the final result, but was told, on return, that it was satisfactory.

(4) *Vincent's Angina.*

When I was called in to advise on this case, the condition of the patient was as shown in fig 4.

FIG. 4.

He had been in hospital for some days and was *in extremis*, as he could hardly swallow. His gums and cheeks were swollen and ulcerated and there were patches on the tongue and throat. Saliva was continually running out of the mouth, as can be seen in the photograph. The tongue was greatly engorged and completely filled the oral cavity.

After injections of massive doses of penicillin and sulphathiazole for three days, the patient made a startling recovery, the condition rapidly subsiding.

Cases such as those reported above make this appointment an interesting one, apart from fractures which average one a fortnight—usually after pay-day !

A CASE OF DIFFUSE GENERALISED GINGIVAL HYPERPLASIA DUE TO EPANUTIN

BY N. SALAMA, L.D.S.ENG., AND AZIZ HILMY, L.D.S.ENG.
Dental School, Cairo

EPANUTIN (sodium diphenyl hydantionate, sodium dilantin, eptoin, solantoin), which is an anti-convulsant used in the treatment of epilepsy, may produce generalised hyperplasia of the gingiva when given over a long period. The occurrence of hyperplasia and its degree are not directly related to the dosage or to the length of the period of administration of the drug. Sex and age are not predisposing factors. It was believed for a time that this type of hyperplasia was partly due to low levels of blood ascorbic acid and that the changes were more marked where ascorbic acid was deficient. Lately A. H. Merritt (1942, *Ann. Dent.*, **i**, 129) has reported that

he found no correlation between ascorbic acid levels, the administration of epanutin and the development of gingival hyperplasia.

Our case is of special interest because it is associated with an endocrine disturbance known as pre-pubertal virilism. The patient was an Egyptian male, aged 9 years, mentally deteriorated and suffering from convulsive seizures for one year. No member of his family was epileptic and there was no history of cranial injury at birth or later. The child's torso was muscular and there was marked pubic hair, precocious sexual development and a profuse hirsutes on the limbs which were short (fig. 1). Blood examination revealed a negative W.R., and a normal cell count.

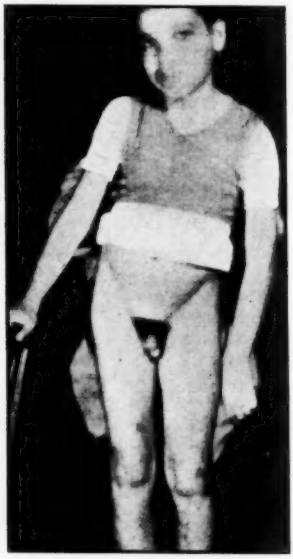


FIG. 1.—Photograph of patient showing marked pubic hair.

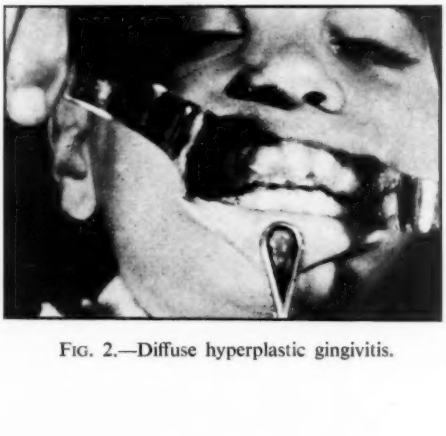


FIG. 2.—Diffuse hyperplastic gingivitis.

He had been under epanutin for nine months and this had definitely reduced the frequency of the epileptic attacks. He had a severe diffuse hyperplasia of the gingiva on both the labial and lingual aspects of the teeth (figs. 2 and 3). His dentition was normal for his age but the crowns of the teeth were almost completely concealed by the hyperplastic gingiva. This tissue was firm and pale pink in colour. There was a complete absence of inflammatory signs and symptoms with no true pocketing and no bleeding on pressure. In the front of the mouth the tissue was distinctly nodular. K. T. Thoma (1944, Oral Pathology, p. 1170. Henry Kimpton, London) has described follicular cyst formation in epanutin hyperplasia, but X-rays showed no evidence of this in our case.

FIG. 3.—Models of upper and lower jaws.

Some of the tissue was removed for histological examination. The tissue was covered by stratified

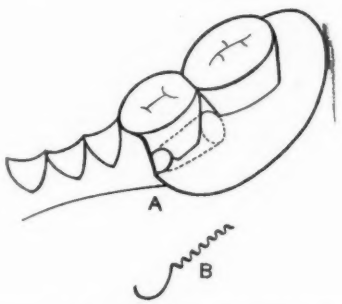
squamous epithelium with a keratinised layer. In the corium there was a marked increase in the amount of fibrous tissue, the collagen fibres forming coarse strands. Blood vessels were comparatively few and there was some infiltration with lymphocytes and plasma cells.

Practical Note

IMMEDIATE REPLACEMENT OF DENTURE CLASPS

By ROBERT CUTLER, L.R.C.P., M.R.C.S., L.D.S.Eng.

Amongst many other uses for the new cold curing acrylic now available (Simplex Pentocryl), the immediate replacement of broken wire clasps on acrylic partial dentures proves one of the most useful, the method also applying to metal based partial acrylic prostheses. No attempt is made to remove the broken tag, a No. 10 rose head bur being used to drill a deep hole into the body of the denture. The orifice of the hole so made is kept in the area of the broken wire, the broken extremity of the tag portion being drilled away to facilitate the placement of the new wire in an identical position. The deeper recesses of the hole may be enlarged by "riding" the bur, over-heating being avoided to prevent clogging of the chips on the bur head. A length of clasp wire is crimped and serrated at one end,



A, Preparation of hole in body of partial denture with orifice on site of broken tag. B, Replacement clasp with crimped serrated tag end.

the hole having been moistened with the liquid; a creamy, almost pasty, mix is quickly prepared and fed into the hole, the remainder being painted on the crimped end of the wire, which is then pushed firmly into position in the depths of the hole. It is held for some minutes with the free extremity as close to the original position of the original clasp wire as possible, and after about three minutes the denture is placed in tepid water for a further ten or fifteen minutes, when the acrylic will be set solid ; the wire can then be bent and trimmed to shape, the excess of hardened acrylic being also removed, after which the completed repair is polished, and ready for immediate use.

Orthodontic Note

Orthodontics and Prescribed Therapy

In a long and valuable discussion of this paper by Dr. Leigh C. Fairbanks, Dr. Lowrie J. Porter said :—There were still some who continued to disregard the limitations of treatment and the necessity for consideration of the amount of tooth substance in relation to bone growth. The nearer this relationship was to the normal of the individual, the greater was the possibility of retention. Maintenance of the arch shape of the individual was very important in securing permanency of results, and one of the strongest reasons for extraction in orthodontic treatment. If they were limited in lateral development of the arches, they must resort to one of two other courses—either the arch must be lengthened or teeth extracted. If lengthening was limited, they were left with one alternative, extraction. If they wished to avoid extraction, they must attempt lengthening the arch. They must not lose sight of the fact that growth was continually changing facial bone structure, but they must also realise that the antero-posterior facial bone growth was developed posteriorly and was not a lengthening (growth) within the previously developed bony structure. They frequently saw a slight crowding of lower anterior teeth after retention ; some were dissatisfied with that and resorted to extraction to prevent it ; Brodie had mentioned that 8 mm. of tooth substance was removed to gain 1 or 2 mm. Extractions shortened the arch and might possibly help to prevent crowding, but there could also be a lateral pressure which tended to narrow the arches. In that case crowding was going to result, regardless of how they treated a case, unless the tongue was strong enough to prevent it, but he believed the chief cause of crowding of the lower anterior teeth was from the extent of overbite. Extraction would help in some cases but would not prevent all failures. They knew that there were limitations to the stability of the treatment of some types of cases, and they gained the confidence of patients when they warned them of the risk of eventual failure in certain cases. He did not believe there could be a set rule that all procumbent incisors must be uprighted to an approximate 90 degree angle to the mandibular base plane, procumbency might be normal to the individual. They could not hope to give all patients what was termed an ideal profile, and if they did, they could not prevent it returning to the individual normal. It used to be common practice to expand greatly ; now they knew better and expanded very little, because it was futile. Orthodontic treatment did not stimulate or produce bone growth. Growth was an inherent factor in an individual, over which they had no control. Le Roy Johnson had shown it was possible to inherit large teeth and small jaws. A new patient was co-operative, but after he had been treated three or four years co-operation was lacking, at the very time they needed it most. It was a definite plan in his practice to avoid treatment until the permanent teeth were in place, with the exception of cross-bites, mesioclusions and cases of great facial deformity ; these were treated early ; all others waited until they could carry the case through without intermittent rest periods.—*Amer. J. Orthodont.* (1949), **35**, 501.

BRITISH DENTAL JOURNAL
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PRIVATE PRACTICE

PRIOR to the institution of the Health Service a dentist working in his own surgery would have been described as a private practitioner, even if the major part of his practice consisted of treatment given to patients under the Dental Benefit Regulations. During the early discussions on the National Health Service Mr. Edward Samson introduced the term "free private practice" to mark the distinction between a private practitioner who remained outside the scheme and one who accepted service under the Acts. This descriptive phrase has inevitably been shortened for the sake of convenience and "private practice" now connotes treatment or advice given in a dentist's own surgery to patients who pay the dentist's fees out of their own pockets; and the Association has compiled a list of private practitioners which contains the names of those members who have notified the Association that their names are not enrolled on the lists of Executive Councils. This list is necessarily incomplete and, even if the name of every member who had not accepted service to some extent were entered on that list, it would still not provide a completely accurate picture of the amount of private practice—using that term in the restricted sense in which it is now generally employed—which is being carried on side by side with practice under the Health Service. It would include a not inconsiderable number of practitioners who hold part-time appointments in hospitals but who do not take part in the General Dental Services. On the other hand, the names of dentists which are included on the lists of Executive Councils in respect of part-time work in connection with institutions of one kind or another—would not be entered on the private practitioners list.

The difficulty of making any estimate of the amount of treatment which is being given under private arrangements is complicated still further by the lack of information with regard to the extent to which practitioners in the Health Service exercise their right in this respect. The Penman report did in fact indicate that in the case of the 261 dentists taking part in the General Dental Service who made returns only about four and a half per cent of their operations were carried out under private contracts. It is, however, open to some doubt whether a figure derived from so comparatively small a sample can safely be applied to the whole body of practitioners. It is probably the case that in some areas of the country practice is almost wholly confined to Health Service patients but it is also true that in other districts there remains a not inconsiderable proportion of patients who prefer, for various reasons, to be treated as private patients. Some dentists deliberately endeavour to limit the demands upon their time by reserving a definite number of hours in each week for private work. Others again have aimed at redressing the balance of the Health Service, so far as their own practices are concerned, by accepting for treatment under the Service only children and adolescents and patients who have received regular dental attention in the past. When allowance is made for all these various factors it is obvious that the amount of treatment which is given privately constitutes a by no means negligible addition to the immense volume of work carried out in the General Dental Service. There is, too, some evidence that the pressure on the time of dentists in the Health Service has led some patients to seek treatment from practitioners who have remained outside the Service. The latter, therefore, have found that on balance their abstention from participation in the new service has had little effect on their practices and they, doubtless, congratulate themselves on their freedom from the restrictions imposed upon their less fortunate colleagues by the General Dental Services Regulations. It is indeed possible that some of them would be opposed to the introduction of a system of grant-in-aid on the ground that the virtual supersession of the fixed scale of fees, inherent in such a system, would render it difficult for them to remain outside the Service.

It would be a mistake to suppose that the clients of private practitioners or those who express a desire to be treated as private patients by practitioners in the Health Service are solely or even mainly drawn from the higher income groups in the population. Economic causes operate to restrict the freedom of choice of large sections of the population, but innate

conservatism—using that term in its widest connotation—is in many cases the determining factor. And it is safe to assume that those who do elect to forgo their right to obtain free treatment are patients who have been in the habit of receiving regular treatment in the past. Taking a broad view it is clear that the absence of any direct compulsion on either practitioners or patients to take part in, or use, the Health Service has imparted a measure of flexibility to the scheme as a whole. This has made it possible for private practitioners to make a substantial contribution to the promotion of the dental health of the community which is not reflected in the cost of the Service. This state of affairs is in keeping with the traditional British addiction for illogical compromises—an addiction which drives some dentists who have themselves elected to remain as private practitioners to take an active part in safeguarding the interests of those of their colleagues who are in the Service.

NOTES AND COMMENTS

The Supplementary Estimates

THE supplementary estimates presented to the House of Commons last week show that the net cost of the National Health Service for the financial year 1949–50 will be over £98 m. in excess of the original estimate £259,727,600. Some £39 m. of this increased expenditure is in respect of advances to regional hospital boards. The excess expenditure on general dental services is now estimated to be £17,744,000. The original estimate of the cost of these services was £30,904,000, England and Wales accounting for just over £28 m. and Scotland for slightly under £3 m. The corresponding revised figures of the total expenditure for the year are England and Wales £43,048,000, Scotland £5,600,000, these represent increases of 54 and 107 per cent respectively. It will be recalled that when the original estimate was published some surprise was expressed that the cost of the service in Scotland for the whole year was put at £100,000 less than the expenditure for the first nine months of the service.

Prospects for Legislation

A SESSION of Parliament in which only a few controversial Bills are to be introduced by the Government offers an opportunity for the passage of measures for which it would otherwise be difficult to find Parliamentary time. A Bill to amend the Medical Acts is foreshadowed in the King's Speech. Since this is to deal with the constitution and disciplinary procedure of the General Medical Council it would obviously be convenient if the constitution and powers of the Dental Board were amended at the same time in a parallel Bill, so as to give effect to the recommendations of the Teviot Committee, which the Government have already intimated they accept in principle. A Bill embodying these proposals would be wholly uncontentious and its passage in the same Session as the Medical Bill would facilitate the establishment of the new relationship between the Council and the Board.

Retirement of Surgeon Captain (D) J. T. Wood

IT is announced by the Admiralty that Surgeon Captain (D) James T. Wood, *C.B.E.*, *K.H.D.S.*, F.D.S. R.C.S.Eng., Deputy Director-General for the Dental Services of the Royal Navy since February 6, 1949, retired on February 23. Captain Wood's career in the Royal Navy has covered a period of thirty-four years. After qualifying in 1916, he served for a short time in the nominal rank of Sick Berth Rating before being granted a commission as Temporary Dental Surgeon R.N.V.R. During the last war, Captain Wood held many important appointments, including that of Command Dental Surgeon on the staff of the Commander-in-Chief, Portsmouth, and Senior Dental Surgeon, R.N. Barracks, Portsmouth. Surgeon Captain (D) Frank R. P. Williams, *O.B.E.*, B.D.S., F.D.S. R.C.S.Eng., has been appointed to succeed Captain Wood.

The Odontological Museum

AN uninterrupted service of fifty years as curator of a museum is surely a record. On the death of Storer Bennett in 1900 a young man of 34 was elected as honorary curator of the Odontological Museum. In that year the Odontological Society, after forty years of connection with the Dental Hospital in Leicester Square, was seeking new quarters. These were found with the Medico-chirurgical Society. Later, when the Odontological Society joined others to form the R.S.M., the museum once more had to seek a home. This was found in the Royal College of Surgeons, where for the first time the Hon. Curator received adequate trained museum assistance. Sir Frank Colyer at the time of his election had a busy practice, was teaching on the staff of the Royal Dental Hospital giving lectures and demonstrations, doing original research and publishing the results in papers to the Odontological and other societies, bringing out single handed his classic "Dental Surgery and Pathology" and besides had a growing family. To

quote from the *B.D.J.*, 1943, **75**, 5, "The duties of a Curator to an evergrowing Museum involve the expenditure of a considerable amount of time, often more than an honorary officer engaged in active practice can spare." That he did spare the time and made the Museum the best of its kind in the world must give him great satisfaction especially as he still retains the post with vigour and efficiency after fifty years.

The New Zealand Scheme

INTEREST in the New Zealand system of training "dental nurses" to undertake the treatment of the teeth of school children is not confined to this country. Dr. A. O. Gruebbel, secretary of the Council on Dental Health has been appointed by the Board of Trustees of the American Dental Association to visit New Zealand to make a critical survey of the scheme. A similar survey is also to be made on behalf of the World Health Organisation by Dr. John T. Fulton, dental services adviser of the U.S. Children's Bureau. The *A.D.A. News Letter* says "Dentists are particularly concerned about the comparatively short period of training required for dental nurses under New Zealand law and the type of health services being provided by dental nurses."

Fifty Years Ago

From the "Journal of the British Dental Association," March 15, 1900.

The essential aim and object of our Association is the promotion and the cultivation and the maintenance of a high professional ideal. We try to carry out our purpose by legislation, by using the laws which exist, and by doing our best to promote other laws which may help in that way. We do it by education; we do it by the interchange of thought and opinion and methods of practice at our periodical gatherings; and we do it as on an occasion like this, and similar occasions, by the promotion of good fellowship which all Englishmen associate with the idea of a dinner of good comrades, whether it be held in London, or in Ladysmith. Forgive me for such a digression, but who of us can help just now having brought to our minds those fellow countrymen of ours who now, we hope, *are* enjoying a good dinner? It will not be such a dinner as the Hotel Cecil can provide, but at all events it must be a good deal better than half a pound of meal and a slice of donkey.

From a speech by Mr. Leonard Matheson at the Annual Dinner of the Metropolitan Branch. The South African war was being fought and the seige of Ladysmith had just been raised.

LETTERS TO THE EDITOR

DECREASE OF DENTAL CARIES DURING THE WAR

SIR,—There is every reason to welcome any discussion which will help to elucidate our knowledge of the causes for the remarkable decrease in dental caries among European children during the war. In the *British Dental Journal* of February 3, 1950, Dr. H. H. Neumann discussed an aspect of this problem: the functional factor which has never been satisfactorily investigated but which does merit systematic exploration. However, there are definite reasons for questioning the comparability of the caries figures upon which he based his conclusion: "the degree of function of the teeth, seems generally correlated to the fall or rise in the dental caries rate." As indicated in the review of Dr. R. F. Sognnaes (*Amer. J. Dis. Child.*, **75**, 792, 1948) from which Dr. Neumann obtained the data for his Table I, there are few figures from the war studies which, by reason of their modes of collection and tabulation, lend themselves to direct comparison from one country to another. In contrast, the real value of the surveys has been to establish that similar general trends of dental caries fluctuations occurred in widely separated countries.

I believe that it is important to point out in detail the lack of comparability of the figures in the column entitled "reduction of caries rate" in Table I of Dr. Neumanns' article. For Denmark, Dr. Neumann used a figure of 7 per cent as representative of the decrease in caries rate. This was based on the reduction in the number of pre-school children with decayed, missing and filled (DMF) deciduous teeth. The 17 per cent figure for Sweden represented the reduction in new carious lesions developed in permanent teeth of 7-year-old children during the year between examinations. The 78 per cent. value for Norway referred to the reduction in the number of DMF permanent teeth per child, 6–7 years of age. In Finland, the 80 per cent figure was limited to the decrease in the percentage of carious first, permanent maxillary molars of 6-year-old children. Obviously, not a single pair of these four values should have been compared. It is unfortunate that dental examinations and methods of presenting the data have not been better standardised throughout the world. Much valuable data has, undoubtedly been buried because of the lack of co-ordination. However, full recognition of this deficiency should caution dental investigators and theorists to make detailed comparison of dental data only after reasonable assurance that the data are comparable.

In Dr. Sognnaes' original review, there were actually some more comparable surveys than those selected by Dr. Neumann which did indicate that the reductions in caries rate in Denmark and Norway were very similar. Furthermore, a number of surveys have demonstrated that the decrease in caries rate in Sweden was appreciably less than for either Norway or Denmark. In other words, quite a different situation actually existed from that deduced by Dr. Neumann.

Furthermore, if the time interval associated with wartime fluctuations in caries could not be satisfactorily explained by factors operating after eruption of the teeth, as strongly indicated in the review of Dr. Sognnaes, obviously, the role of oral function is minimized as much as that of the various other oral environmental factors.

Harvard School of Dental Medicine,
188, *Longwood Avenue,*
Boston 15, *Massachusetts.*

Yours faithfully,
JAMES H. SHAW,
Assistant Professor of Dental Medicine.

OCCLUSAL EQUILIBRATION

SIR,—Appreciating the communication of S. Cripps and agreeing with him that instruction in occlusal equilibration requires constant repetition to provide complete understanding, I should like to refer to Linghorne's theory on the findings of Stein, Cameron and Campbell.

Linghorne's theory summarised it as follows :

Functions of the cusps.

1. Guidance of the teeth into their correct positions.
2. Maintenance of the teeth in these positions until the bone is strong enough to assume this function without cusp aid.

That cusps have this function to perform should be kept in mind before occlusal equilibration is decided upon as a treatment of the functional factor in periodontal therapeutics—especially where children are concerned and especially immediately following orthodontic treatment.

270, *Bath Street*, *Glasgow, C.2.* Yours faithfully, LORNE ROXBURGH.

PREVALENCE OF IMPACTED PREMOLARS AND CANINES

SIR,—There seem to be many more impacted premolars and canines than there were fifteen years ago. If this is not a mere—and erroneous—impression but a common experience it should be interesting to hear views as to the cause.

Is it a genetic tendency toward decrease in size of jaws, formerly latent, which is now becoming patent because more and more children are retaining more and more permanent teeth ? Or is it an environmental factor related to the relative neglect of the deciduous dentition and an increasing care for the permanent dentition ? Or is it both, or something quite different ?

11, *Crescent Road*, *Ipswich.* Yours faithfully, J. R. TOLLER.

IMPLANTATION

SIR,—I was present at the excellent meeting of the Metropolitan Branch on Thursday, February 16, when papers were read on implantation. As time was short, and so many people wished to speak, I refrained from prolonging the meeting.

I did want to point out that there are some dangers connected with implantation. I did my first implantation as long ago as 1903, a lower molar in a boy of 13, a healthy tooth that had been accidentally broken, involving the loss of the entire buccal surface. The tooth was extracted under N_2O, and held in lint dipped in 1 in 1,000 hyd. perchlor, and the root filled and an amalgam built up. The apices of each root were removed, and the tooth replaced under N_2O, and that tooth remained to my knowledge for thirteen years.

One of the other cases I foolishly attempted, was to implant four lower incisors, which were somewhat loose. The same procedure was carried out, but I caused a severe bacterial endocarditis and nearly lost my patient. The teeth were, of course, removed at once, and the patient finally recovered.

No doubt the injection of a large dose of penicillin would have avoided this, but this was in 1903.

I point out this danger chiefly to the younger members who may rush in and attempt this operation, when it is not justifiable. I was young in those days, and enthusiastic to try all new stunts, so I trust that this warning will be heeded. I have not done an implantation case now for many years, I prefer to rely on the ordinary apicectomy for all teeth in the incisor regions, which usually show a good result.

I noticed in the Journal of February 17 that Mr. Henry Matthews points out the danger of endocarditis when the dental surgeon is not aware of any rheumatic or congenital heart lesion of any sort.

69, *Wimpole Street*, *W.1.* Yours faithfully, LINDO LEVIEN.

CORRECTION

SIR,—The reference (Goldsmith, E. D. (1949) *Nature* **163**, 184) to the final paragraph of my paper " Modern Drugs in Dental Surgery " (*Proc. R. Soc. Med.*, Odontological Section, 1950, **43**, 60) should be : Review, *Brit. dent. J.* (1949) **86**, 237, the suggestion, mentioned by me, that " the destruction of interfibrillary cement substance in parodontal disease may be due to hyaluronidase formed by the bacteria in pyorrhæal pockets " having been made by your reviewer P. H. Staple, B.D.S., B.Sc., who was commenting on the work of Drs. C. Regan and K. Meyer of the College of Physicians and Surgeons, Columbia University.

My error is regretted.

Dept. of Pharmacology, *The University*, *Liverpool 3.* Yours faithfully, WALTER J. DILLING, *Professor of Pharmacology.*

Reviews and Abstracts

THE MIDDLESEX HOSPITAL. By Hilary St. George Saunders. Max Parrish. London. 1950. Pp. 100. Price 8s. 6d.

Most appropriately this history of the hospital has on its dust cover the picture of a nurse standing in the light of a window, for nurses are the workers in the hive upon whom all depend.

The author has written a fascinating account of the beginnings in the small houses in Windmill Street rented from Mr. Goodge in 1745. The Northumberland family have been benefactors from that time. The ground chosen for the hospital was rural, "a good place for snipe shooting," and "the Farthing Pie House" the last place of refreshment on leaving town. It is enlightening to see the illustration of the ward for women—because of its spaciousness and cleanly look—and the attractive figures of the nurses in 1808. The Middlesex has always made a feature of the nursing side, giving it the best accommodation available, culminating in the commodious nurses home of the present day. The Hospital has been associated with dentistry for more than a century. Sir John Tomes entered the newly formed medical school in 1837 and there delivered in 1848 the course of lectures on Dental Pathology which have become world classics in

dentistry. Of the other great men who have figured on the staff many have a dental interest. Among them are Pennell Hawkins, the friend and colleague of Berdmore, Herbert Mayo, the surgeon to whom John Tomes was pupil, James Arnott, to whose influence at the Royal College of Surgeons the diploma in dental surgery is largely owing, Campbell de Morgan, with whom Tomes collaborated in the work on the histology of bone—work which led indirectly to Tomes adopting dentistry as his career. Others such as Bland-Sutton have had intimate association with dentistry. No other medical school can rival the Middlesex in the influence its surgeons have had in making dentistry a profession, for it was through their association with, and their knowledge of the character of, John Tomes that so much was effected both in the matter of the diploma and in the passing of the first Dentists Act.

The Hospital has dominated North London for over a century—and has had many vicissitudes. Its early connection with the school of anatomy, begun by William Hunter and carried on by Charles Bell, is an interesting story. The great research department, as the author states, "is part of the history of man's unceasing attempt to solve the problem of disease." In this undoubtedly the nursing sisterhood has done its share, for without their tender care and efficient watchfulness the work of the physicians and surgeons would have been seriously retarded.

It is a story which many will delight to read, for it is told in simple and illuminating language, beautifully illustrated, easily held in the hand, well indexed and low in price. It will rank highly in the histories of hospitals.

For over two hundred years the Middlesex has been carried on by voluntary contributions. It remains to be seen what effect the new Health Service Act will have upon it.

A Roentgenographic Survey of Periodontal Disease in India.—The high incidence of periodontal disease in India, which is a matter of common observation, is confirmed by a clinical and radiographic study of a representative population group of 538 males and 30 females of ages from 9 to 60 years. By the recognition of early signs of alveolar bone destruction it was found that in Indian subjects periodontal disease has its incipiency in childhood and that after the age of 16 some degree of bone resorption is almost universal. In a child of 13 there was extensive alveolar resorption in one situation. Up to the age of 30 females show significantly less alveolar bone resorption than males but show a relatively high incidence of the vertical type of resorption or periodontosis. This susceptibility among Indians appears to have a systemic origin and is probably due to a physiological bone weakness. Mineral and vitamin deficiencies, which are very common in India, are known to bring about such weakness of the supporting tissues of the teeth.—DAY, C. D. MARSHALL, and SHOURIE, K. L. (1949) *J. Amer. dent. Ass.*, **39**, 572.

Relieving Pain Caused by Dentures.—Pain produced by a denture resting upon the alveolus may be due to a failure of the bone to resorb evenly, leaving sharp spiny processes. Vertical nutrient canals can often be seen in radiographs of the mandibular alveolus; these accommodate vessels and nerves and each time the denture is bitten upon the contents are compressed and this may be a cause of pain. The pressure may even be transmitted along the nutrient canals to the mandibular canal. Surgery is the only satisfactory way of affording relief. An incision is made along the crest of the ridge and the mucosa is retracted. The bone surface is very carefully inspected and any irregularities are planed smooth. Small pin-point freely bleeding areas may be encountered. These are the openings of the canals and they should be cauterised as deeply as possible, either with phenol or electrically. Healing may take some time and a denture should not be worn until it is complete.—DRURY, G. H. (1950) *Oral Surg.*, **3**, 31.

THE HEALTH SERVICE

NOTES FROM HEADQUARTERS

By our special correspondent

FINDINGS OF SERVICE COMMITTEE QUASHED

THE High Court recently made an order of certiorari to quash the findings of a Dental Service Committee.

The Executive Council concerned in the case had referred to their Dental Service Committee for investigation certain allegations against a dentist. The dentist was informed of these allegations and was asked to give his observations for the benefit of the Service Committee. The dentist duly replied and heard no more until the following month, when he was informed by the Clerk of the Executive Council that the Service Committee had considered the case and had recommended the Council that the dentist should be severely reprimanded and should forfeit £5 from monies due to him.

At this stage the dentist consulted the Association. The Regulations which governed the conduct of Service Committees clearly provide that a Committee must give to the practitioner against whom allegations are made notice of the meeting at which they will be considered, and must inform the practitioner of his right to be present at the meeting if he so wishes and to answer the charges against him. No such notice had been given to the dentist in this case, nor was he informed of his right to appear before the Committee in his own defence.

The Association immediately took the case up with the Ministry of Health pointing out that the proceedings were irregular under the Regulations, and asked the Ministry to intervene in order to prevent the matter going any further. It was also clear that the action of the Service Committeee violated a vital principle of natural justice, namely that a man should not be convicted without being given the opportunity to defend himself. The Ministry agreed that the proceedings were

irregular but said that arrangements were accordingly being made for the case to be heard afresh.

The Ministry's action in referring the case for a re-hearing raised an important new issue of principle, and the Association felt bound to protest strongly against this step on the ground that it would violate a further important principle of justice, namely that a man having been convicted at a trial that was subsequently found to be irregular, should not be tried again on the same charge. The fact that in the view of the Ministry the rehearing should have taken place before the same committee (though possibly with some changes in personnel) as had come to an adverse decision against the dentist in the first place, only served to underline the fundamental differences that exist between Ministerial ideas of justice and those commonly accepted by the Courts of this country.

The Ministry, however, maintained their decision that the case must be heard again. The Association therefore advised the dentist to take action in the courts to restrain the Service Committee from rehearing his case, and the dentist acted accordingly, with the support of the Association. Application was made to the King's Bench Division for leave to apply for two orders, the first to quash the finding of the Committee at the first hearing, and the other to prevent any second hearing taking place. The Court decided that the first application must be dealt with before the second was considered and accordingly granted leave to apply for an order of certiorari quashing the findings at the Committee's hearing which had already been held. Before the subsequent hearing of the application itself, the Executive Council gave an undertaking that they would consent to the order, that their Service Committee would not proceed to rehear the case against the dentist, and that they would pay the costs of the action. The Court subsequently made the order of certiorari and in the circumstances no further application, for an order of prohibition, was necessary.

It should perhaps be explained that the Courts will not always interfere to protect a practitioner against an adverse finding of a Service Committee. Where the practitioner is aggrieved because he considers that the Committee's decision is against the weight of the evidence or for a similar reason, his only remedy is to exercise his right under the Regulations, viz. to appeal to the Minister of Health, and the Courts have not normally the power to intervene. The orders of prohibition and certiorari are only available where the practitioner has been seriously prejudiced by some failure of the Committee, the Council, or the Ministry to comply with the clear provisions of the Regulations, or, perhaps, where there is a gross disregard of fundamental principles of natural justice—both of these features being present in the case reported above.

SCOTTISH APPOINTMENTS

THE Secretary of State for Scotland has made the following appointments :—

Scottish Health Service Council :—Mr. J. F. Henderson (reappointed).

Dental Advisory Committee :—Messrs. H. M. Biggs, J. Campbell and J. J. Davidson (reappointed) ; new member, Mr. W. Rodger, Chief Dental Officer, Fife County Council.

HEALTH SERVICE PAYMENTS IN LONDON

IT was reported to the London Executive Council that payments to dentists during the ten months ended January 31, 1950, totalled £3,212,956. During the same period medical practitioners received £2,025,790 and ophthalmologists and opticians £1,967,340.

Public Dental Service

NOTTINGHAMSHIRE COUNTY COUNCIL EDUCATION COMMITTEE

ANNUAL REPORT OF THE COUNTY SCHOOL MEDICAL OFFICER FOR THE YEAR 1948

ON the inside of the front cover of this Report appears the following " . . . and the children's teeth are set on edge."—Jeremiah XXXI, 29. Truly the old prophet and his lamentations are well attuned to the conditions of the School Dental Service to-day. School Medical and Senior Dental Officers must be hard put to it to restrain their pens from being dipped in vitriol and certainly the " cri de coeur " from Dr. Tibbits quoted below will find a ready echo in many other sympathetic minds. He speaks with the authority of intimate knowledge and long-standing interest. This is what he writes : " The significant debit—and how significant—is the tragic loss of dental staff, with the consequentially inevitable relapse from preventive dentistry to ' patch-up ' dentistry.

" Years of patient building-up of the Service and of the dental condition of our children are being lost, the latter irretrievably.

" This is a bitter disappointment and at the time of writing the position is even worse than that recorded in the Report.

" Disappointment almost amounts to anger when it is realised that the National Health Service Act was designed to forestall this possibility by requiring Local Health Authorities to provide priority dental treatment for expectant and nursing mothers and young children, this requirement being based on the knowledge of the existence of more or less adequate dental services provided by the Local Health Authorities in their capacity as Local Education Authorities and on the assumption of the inviolability of those services.

" In practice, however, this section of the Act lost all potency, as the approved scale of fees, together with the very large public demand for service, resulted in such a magnification of the earnings of dental practitioners within the General Dental Service as to result inevitably in severe depletion of Local Authority Dental Services.

" This possibility was evidently not foreseen."

That last sentence could be a classic in scathing understatement. The Senior Dental Officer, Mr. Mason, is the perfect witness, and the sterling work he is doing for the service is well known. He presents no frills, just hard facts which are left to supply their own eloquence. This is his annual official forum and comment is legitimate. He will forgive the soft impeachment that he may be suffering from an excess of impartiality and that sometimes he might forsake his judicial calm with advantage. Nottinghamshire's problems are those of the whole length and breadth of the land. A school population of 60,000, an unknown, but probably considerable, number of expectant and

nursing mothers and pre-school children, are expected to be catered for by 8 full-time dental officers. Heaven help them and all others in like case ! Nottinghamshire rightly adheres to the principles of limitation suggested by the wartime circular 1523. The conditions which called for the issue of that circular still obtain, with far less justification. While, therefore, school dental statistics can have little clinical value, they can have significant human values. In Notts during 1948, there was a sharp rise of 11 per cent in the acceptance rate of proffered treatment compared with 1947. Unfortunately there is no available separate figure indicating the number of emergency cases dealt with but it would be a fair guess to assume that a severely depleted staff found they had to deal with large numbers of children in pain, previously treated privately but with whom the fully occupied general dental service practitioners could not cope. This is important. The doleful figures published by other authorities of young children suffering from avoidable pain and sepsis should be banner headlined until they sear the conscience of every one in authority, lay and professional. This is the grimmest phase of the denouement which was " evidently not foreseen." Congratulations can be extended to the Nottinghamshire staff on a solid year's work. 22,607 examinations of children actually treated, 16,408 fillings, 26,599 extractions are three of the items. Quite a formidable bill had it been addressed to Eastbourne.

Dental News

COMPLIMENTARY DINNER TO Messrs. F. J. BALLARD, A. H. CONDRY, and T. FLITCROFT

PAST members of the Incorporated Dental Society who anticipate being present at the Complimentary Dinner to be held at the Dorchester Hotel, London, on Saturday, April 22, 1950, at 7 p.m., and have not yet applied for their tickets, are advised to send in their applications without further delay to the Organising Secretary and Treasurer, Mr. W. A. Mellish, 80 Ewell Road, Surbiton, Surrey.

The number of tickets is limited and no application can be received after April 15.

OFFER OF HOSPITALITY IN ITALY

DR. N. L. Calarese, of Naples, who represents Italy on the Executive Council of the F.D.I., wishes to arrange an exchange of visits between a British colleague and himself. He offers hospitality in his home for a month, preferably July, in exchange for similar hospitality in England. The month of August would be the most convenient time for him to come to England. Dr. Calarese speaks English but is anxious to improve his knowledge of the language. His address is Via Verdi 35, Naples, Italy.

PROPHYLAXIS OF TEETH BY FLUORIDES

THE Ministry of Education announce that arrangements have been made to carry out a test of the efficiency of applications of solutions of fluorides in preventing dental caries in children.

The test will be applied to some 3,000 children.

It will be given by the staffs of a number of dental hospitals and of local education authorities. The participating bodies are : Eastman Dental Clinic, London (in co-operation with the London County Council) ; Newcastle Dental Hospital ; Newcastle Local Education Authority ; Leeds Local Education Authority ; West Riding Local Education Authority ; Sheffield Dental Hospital ; Sheffield Local Education Authority ; Birmingham Dental Hospital ; Bristol Local Education Authority ; and, possibly, Middlesex Local Education Authority.

The methods of selecting the children may vary according to local arrangements, but no child will receive the treatment without the parent's consent. Both boys and girls will be included, but it is not proposed to give the treatment to any child over 12 years, since such children would have left school before the full effects of the treatment could be observed.

ORTHODONTIC CONGRESS IN ROME

THE Twenty-third Congress of the " Société Francaise D'Orthopédie Dento-Faciale " and the Fourth Congress of the " Societa Italiana di Ortognatodonzia " are to be held in Rome, under the Presidency of Professor E. Muzj, from Monday, May 22, to Friday, May 26.

The central theme for discussion at the Congress will be the " Mesio Position of Molars," other subjects will also be discussed and a series of demonstrations is being arranged for each day of the Congress.

A comprehensive programme of excursions and entertainments is being arranged in connection with the meeting.

Orthodontists from all countries are invited to take part in the Congress further particulars of which, and of the attractive special travel and hotel rates which are available for members of the Congress, can be obtained upon application to the Secretary du Congrès d' Orthopédie Dento-faciale, 2, Rue Adige, Rome.

THE SCIENTIFIC FILM ASSOCIATION
Conference

THE Scientific and Technical Group of The Royal Photographic Society and the Sciences Committee of The Scientific Film Association are arranging a one day Discussion Meeting on " Photography and Cinematography by Invisible Radiation," on Saturday, April 15, 1950, at The London University Institute of Education.

The programme of the Conference will include discussion of the following subjects : Ultra-violet microscopy including colour translation microscopy, Ultra-violet photography with special reference to reflection and phase contrast microscopy, ultra-violet film technique, Grenz rays, infra-red, ultra-violet and X-ray radiations in criminology and in the inspection of paintings, infra-red film technique, tomography, X-ray photography and cinematography including flash X-rays and ultra-hard X-rays.

The Conference will conclude with a two hours showing of British and foreign research films utilising invisible radiations.

Research workers who are interested in making any contribution, who wish to suggest any material for discussion or who have any information as to the existence or availability of any suitable photography or films for showing at the Conference are invited to get into touch with either the Hon. Secretary, Scientific and Technical Group, The Royal Photographic Society, Research Laboratories, Kodak Ltd., Harrow, Middlesex, or the Hon. Secretary, Sciences Committee, The Scientific Film Association, 4, Great Russell Street, London, W.C.1.

The fees are 15s. for members of The Royal Photographic Society and The Scientific Film Association ; £1 for non-members. This fee includes a buffet tea in the afternoon.

Application for tickets should be made to the Secretary of the SFA, 4, Great Russell Street, London, W.C.1, from whom further information regarding the Conference can be obtained.

DENTISTS IN PARLIAMENT

At the recent General Election Mr. H. G. McGhee, Dentist of Sheffield, was re-elected as Labour member for the Penistone division of the West Riding of Yorkshire by a majority of 18,851 over his Conservative opponent.

P.D.O.s PLACED ON MAXIMA

Plymouth Education Committee, in view of the difficulty of obtaining and retaining the services of school dental officers, are to place all such officers on the maxima of their scales.

ILLEGAL PRACTICE

Albert Edward Lloyd, of Cleveleys, near Blackpool, was fined £150 at Fleetwood on three summonses for practising dentistry when he was not registered. It was stated in Court that the defendant had been convicted of similar offences on three previous occasions.

The Schools

GUY'S HOSPITAL DENTAL SCHOOL ANNUAL CLINICAL MEETING

Guy's Clinical Meetings have become annual social functions which not only attract very large numbers of past students of Guys but are attended by many visitors from other schools. This year's Meeting, held on Saturday, March 4, may without exaggeration be described as a brilliant display. The structural alterations and re-equipment of many departments, which last year were in progress, have now been completed and the new chairs and units with which most of the school is now equipped were much admired.

Through the courtesy of Pye Ltd. of Cambridge visitors had the unique experience of seeing colour television. By this means they were able to watch in the comfort of the lecture theatre operations being performed in the operating theatre. In the afternoon a demonstration by Professor M. A. Rushton of interesting clinical cases was televised. Although the reception was imperfect this demonstration of the uses of colour television gave some hint of the educational possibilities of this new medium.

All departments contributed something to the success of the meeting and there were many enthusiastic demonstrations by the staffs of teaching methods, the latest techniques, and of the general work of the various departments. The work of the Upper Respiratory Research Unit attracted a good deal of attention and in the Photographic Department the new Dyce Deep Focus Camera was on show. Mr. M. V. Stack demonstrated the use of filter paper chromatography for the identification of the organic constituents of dentine and Mr. D. J. Anderson showed an electronic gnathodynamometer. Professor M. A. Rushton had assembled an interesting collection of pathological specimens.

Glasgow Dental School.—The Annual Clinical " At Home " of the School will be held at the Glasgow Dental Hospital on Friday, May 12, at 2.30 p.m. All former students of the School will be welcomed. A Reunion Dinner will be held at 7 p.m. on the same evening, at the Beresford Hotel. The number of tickets (price 25s.) is limited and early application, accompanied by a remittance, should be made to Mr. J. A. Orr, Glasgow Dental Hospital and School, 211 Renfrew Street, Glasgow, C.3.

Examination Results

Royal College of Surgeons of England.—*Final L.D.S.* T. H. Aldridge, Mary C. Bettinson, D. R. Boswell, C. B. Bowes, D. G. Brett, W. L. A. Davies, D. A. Dixon, Shirley P. Domb, W. L. Doughty, S. M. El-Kharusi, P. Frank, P. T. Franklin, V. H. Freiberger, D. Gibson, P. Glazebrook, G. Greenwood, Karla L. Hambury, C. Hams, J. D. Haworth, E. Hirsch, P. J. Holloway, L. Hoogenhout, M. J. Humphry, N. J. Inman, V. M. Kher, R. J. Knight, B. E. Lawson, A. P. Leech, A. A. Leigh, J. G. Lloyd, M. E. Mager, R. E. Mather, J. Perint, S. J. Rigden, I. L. Roth, J. C. G. Scott, A. C. Sorrell, A. H. Stocker, E. F. Strohlein, W. R. Thomas, H. G. S. Thomson, P. H. Tucker, D. G. Turner R. E. B. Turner, G. J. L. Want, N. J. Wood.

Obituary

GEORGE PERCIVAL MONK, L.D.S.Lpool.

The passing of G. Percival Monk, at the comparatively early age of fifty-seven, came as a shock to many of his friends.

He went from his home in Chester to Liverpool Dental School, where he met his wife who was also a dental student. He joined the Army in the ranks in 1914, but was invalided out and returned to Liverpool and qualified in 1916. Then joining the Navy, he was posted to the Dover Patrol, where he had the privilege and honour of serving, as Surgeon Probationer, with Evans of the "Broke." He was afterwards commissioned as Surgeon Lieutenant (D) and posted to Devonport.

On demobilisation he accepted a post as School Dental Officer at Barry, which he resigned after a short period and went into private practice there. By sound work he built up a very good practice and later established another practice in Cardiff. He became Dental Surgeon to the Sully and Glan Ely Hospitals. During the last war he was Admiralty Dental Surgeon at Barry.

Monk joined the Association in 1918 and he had not been a member of the S. Wales & Mon. Branch very long before William Kittow noted that he would be a valuable member not only of the Branch but of the Association itself. He was soon elected to the Branch Council. He was Branch President in 1928 and served in every capacity in the branch except treasurer. It was as Branch Secretary from 1935 to 1947 that he gave of his best and became most widely known and appreciated. In 1947, on account of ill health, he resigned the secretaryship much to the regret of the members. He was again elected to the Branch Council of which he was a member for nearly thirty years.

His was a full and enjoyable life spent in the service of the Association he loved. For some years he was an enthusiastic Rotarian, a keen golfer (being a past Captain of the Leys Golf Club) and a competent fisherman. He used to look forward to a few days at sea in a trawler and the dirtier the weather the better he seemed to like it. He was a man with very definite opinions but his kind and gentle manner endeared him to all and those who knew him were enriched by his friendship. The Association has lost a very worthy servant.

We offer our sympathy to his wife and their son and daughter.

WILLIAM EDWARD GANNEY

WILLIAM EDWARD GANNEY died at his home at Brighton on February 25 after a long illness. He was registered under the Dentists Act 1878 and practised for many years. A very able man, he had many interests. He founded the Vulcan Dental Manufacturing Co., manufactured teeth and dental rubber on a large scale and distributed these products throughout the profession with a service which commended itself to dentists everywhere. Gifted with unique commercial acumen he attained prosperity whilst at the same time giving very good value to his customers.

Ganney was an excellent dentist, he possessed a strong personality, and a sound fund of common sense. He never hesitated to express his thoughts which were embellished with a dry humour which deprived them of sting and made his hearers seriously to ponder their import.

He was a member for very many years of the Incorporated Dental Society for which he had a great affection and was ever ready to advance its interests. Associated as guide and friend of the late Fred Butterfield he gave the same guidance and friendship to his successor.

Though ever ready to point to and condemn mistakes, his advice was most valuable to those who were ready to profit by it, and whilst he did not hesitate to unveil the weaknesses of the dental profession he loved it and was proud of the fact that he was a member of it. A most lovable man, a great character, the profession is the poorer for his passing. His contribution to its well-being was a great one. His knowledge of the personnel of the profession was probably wider than that of any other member of it and there will be many who will mourn the loss of a virile, cheery understanding personality. The utmost sympathy of his many friends is extended to his widow in the bereavement she has sustained.

A. H. C.

Charles Beresford-Behrens, L.D.S.Lpool, of Lancaster, died suddenly on February 23. He qualified at Liverpool in 1931 and was elected to the B.D.A. in 1935. He was a representative of the profession on the Lancashire Executive Council.

Ernest Pevirgton, L.D.S.Eng., of Rhyl, died on March 6, at the age of 80. He qualified from Liverpool Dental School in 1897 and joined the Association in 1900. He was a past president of the West Lancashire and West Cheshire Branch, honorary dental surgeon to Royal Alexandra Hospital, Rhyl War Memorial Hospital, Convalescent Home for Men, and the School for the Blind, Rhyl. He leaves a widow and one son.

James Fernandez Howard Clarke, L.D.S.Eng., of 67 Wimpole Street, London, W.1, died in the Middlesex Hospital on March 2, 1950. He qualified from the Royal Dental Hospital in 1911 and joined the B.D.A. in 1916. He was honorary dental surgeon to the Westminster General Dispensary.

Norman Harris, L.D.S.Eng., School Dental Officer to Devon County Council, collapsed and died at the Castle Road Clinic, Torquay, on February 13. He qualified from Guy's in 1925 and was in private practice in Torquay before joining the school dental service in 1937. He served in the Army Dental Corps during the war and reached the rank of Major.

Martin Henry, L.D.S.Eng., died at Ryde, on March 2, in his 97th year. He qualified in 1878 and practised in Folkestone for many years.

Denis Leonard Power, L.D.S.Eng., of Radlett, died on March 4, as the result of a motor accident. The elder son of H. L. Power, L.D.S.Eng., of Wimbledon, he qualified from Guy's in 1939. He leaves a widow and two children.

Edward Percy Smith, L.D.S.Eng., of Boston, Lincolnshire, died on February 28, at the age of 77. He qualified in 1897 from the Royal Dental Hospital and joined his father in practice in Boston, in which he was later joined by his brother-in-law Mr. D. MacTaggart. He took up rose growing as a hobby and eventually turned his nurseries into a commercial venture. At one time he had 20 miles of rose trees under cultivation. He was a prominent Freemason and a keen amateur actor.

Birth

CAYGILL.—On March 8, at Beechfield Nursing Home, Croydon, to Emmie, wife of Lieutenant-Colonel L. K. Caygill, R.A.D.C. (retd.), a brother for Michael and Peter (David John).

Deaths

HOWARD CLARKE.—On March 2, 1950, in the Middlesex Hospital, London, James Fernandez Howard Clarke, L.D.S. R.C.S.Eng., of 67 Wimpole Street, London, W.1, and of Longhurst Rise, Woldingham, Surrey, aged 62 years.

POWER, DENIS LEONARD, L.D.S. R.C.S.Eng., ex-Squadron Leader R.A.F.V.R., of 104 Newberries Avenue, Radlett, Herts, suddenly in motor accident on March 4. Dearly loved husband of Pauline and father of Roger and Penny. Elder son of Mr. and Mrs. H. L. Power of Wimbledon.

Our Diary

Saturday, March 18.

Public Dental Officers' Group—Yorkshire Division.—Y.M.C.A., Albion Place, Leeds 1, 3 p.m. Speaker: D. E. Taylor.

Tuesday, March 21.

Coventry and District Section.—Bath Hotel, Leamington Spa, 8 p.m., preceded by dinner, 7 p.m. "Extractions planned and unplanned," E. K. Breakspear.

Worthing Section.—Annual Meeting, Worthing Squash Club, George V Avenue, Worthing. "Casual Communications."

Wednesday, March 22.

Wessex Branch.—Polygon Hotel, Southampton, 8.15 p.m., preceded by informal Dinner, 7.15 p.m. "Pitfalls in Skiagraphic Interpretation," L. J. Godden.

Thursday, March 23.

Guildford and District Section.—Cotteridge Hotel, Woking. Films, 3 p.m.; Annual Meeting, 5 p.m.; Annual Dinner, 7.30 p.m.

Metropolitan Branch—Northern Section.—Britannia Hotel, Camden Town, N.W.1, 7.45 p.m., preceded by cold supper, 7 p.m. "Full Dentures," W. L. Cocker.

South Wales and Monmouthshire Branch.—Ivy Bush Hotel, Carmarthen, 7 p.m. "Some Modern Minor Surgical Operations of the Jaw," G. G. Exner.

Friday, March 24.

East Lancashire and East Cheshire Branch.—Amalgamation Celebration Dinner and Entertainment, Denmark Hotel, Lloyd Street, Moss Side, Manchester 15, 7 p.m.

Northern Ireland Branch.—Ulster Medical Institute, College Square North, Belfast, 8 p.m. Lecture and Demonstration on Hypnotism, Rev. A. L. Agnew.

Saturday, March 25.

Aberdeen Section.—Coming-of-Age Dinner-Dance, Northern Hotel, Aberdeen, 7 for 7.30 p.m. Tickets £1 1s. obtainable from Hon. Sec., North of Scotland Branch, 86½ Crown Street, Aberdeen.

North of Scotland Branch.—Imperial Hotel, Aberdeen, 3 p.m. Table Demonstration, Gavin Ferguson.

Monday, March 27.

The Royal Society of Medicine.—Odontological Section.—1, Wimpole Street, London, W.1, 5.30 p.m. "Evidences of Disease in the Mouth," Dr. C. Baker.

Tuesday, March 28

Metropolitan Branch.—Eastman Dental Clinic, Gray's Inn Road, London, W.C.1, 7.30 p.m. "Photography in the Service of Dentistry," H. Mandiwall.

Wednesday, March 29.

British Dental Association Photographic Society.—13, Hill Street, Berkeley Square, London, W.1, 7 p.m. Showing of Members' slides. New members of the B.D.A. cordially invited, with guests.

Thursday, March 30.

The Royal Dental Hospital Students' Society.—Royal Dental Hospital, Leicester Square, London, W.C.2. "Bite Recording for the Edentulous Case" (including colour film), Professor J. Osborne.

Friday, March 31.

West Kent and District Section.—Wrotham Park Club, 8.15 p.m., preceded by informal dinner, 7.30 p.m. "Bridgework," Alan Thompson.

Saturday, April 1.

West Lancashire, West Cheshire and North Wales Branch.—Conjoint Meeting with East Lancs and East Cheshire Branch, Midland Hotel, Manchester, 2.30 p.m. "The Trigeminal Nerve and Its Injuries," Professor Jefferson. Informal lunch, 1 p.m.

East of Scotland Dental Golf Club.—Gullane No. 1, 9 a.m.

Thursday, April 13.

Bournemouth and District Section.—Annual Meeting, Grand Hotel, Fir Vale Road, Bournemouth, 8 p.m., preceded by Informal Dinner, 6.30 for 7 p.m. "Radiology—Causes of Pain and Swelling shown in X-ray Films," F. L. Ingram.